PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 19; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 28 AA;

Alignment Scores:

Pred. No.:	6.43	Length:	28
Score:	28.00	Matches:	28
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	15.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74370 (1-28)

```
Qy        459 CGACTGACTGCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAG 518
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ArgLeuThrAlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGln 20

Qy        519 CTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||
Db         21 LeuSerLeuLeuMetTrpIleThr 28
```

RESULT 16
ABP74371
ID ABP74371 standard; peptide; 28 AA.
XX
AC ABP74371;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:255.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX

PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 19; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 28 AA;

Alignment Scores:

Pred. No.:	6.43	Length:	28
Score:	28.00	Matches:	28
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	15.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74371 (1-28)

```
Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTG 560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProVal 20

Qy        561 TTTTTGGCTCAGCCTCCCTCAGGG 584
              ||||||||||||||||||||||||
Db         21 PheLeuAlaGlnProProSerGly 28
```

RESULT 17
ADC09230
ID ADC09230 standard; peptide; 28 AA.
XX
AC ADC09230;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 255.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.

```
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 255; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 28 AA;

Alignment Scores:
Pred. No.:               6.43          Length:         28
Score:                   28.00         Matches:        28
Percent Similarity:      100.00%       Conservative:   0
Best Local Similarity:   100.00%       Mismatches:     0
Query Match:             15.56%        Indels:         0
DB:                      1             Gaps:           0

US-10-023-182-1 (1-752) x ADC09230 (1-28)

Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTG 560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProVal 20

Qy        561 TTTTTGGCTCAGCCTCCCTCAGGG 584
              ||||||||||||||||||||||||
Db         21 PheLeuAlaGlnProProSerGly 28

RESULT 18
ADC09229
ID   ADC09229 standard; peptide; 28 AA.
XX
AC   ADC09229;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 254.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
```

```
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 254; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 28 AA;

Alignment Scores:
Pred. No.:               6.43          Length:         28
Score:                   28.00         Matches:        28
Percent Similarity:      100.00%       Conservative:   0
Best Local Similarity:   100.00%       Mismatches:     0
Query Match:             15.56%        Indels:         0
DB:                      1             Gaps:           0

US-10-023-182-1 (1-752) x ADC09229 (1-28)

Qy        459 CGACTGACTGCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAG 518
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ArgLeuThrAlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGln 20

Qy        519 CTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||
Db         21 LeuSerLeuLeuMetTrpIleThr 28

RESULT 19
AAE07757
ID   AAE07757 standard; peptide; 27 AA.
XX
AC   AAE07757;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human HLA-DP restricted T cell epitope #2 of NY ESO-1 protein.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
```

PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 27 AA;

Alignment Scores:

Pred. No.:	7.88	Length:	27
Score:	27.00	Matches:	27
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	15.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07757 (1-27)

```
Qy        504 TCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTT 563
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProValPhe 20

Qy        564 TTGGCTCAGCCTCCCTCAGGG 584
              |||||||||||||||||||||
Db         21 LeuAlaGlnProProSerGly 27
```

RESULT 20
AAE07717
ID AAE07717 standard; peptide; 27 AA.
XX
AC AAE07717;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #3.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 15; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 27 AA;

Alignment Scores:

Pred. No.:	7.88	Length:	27
Score:	27.00	Matches:	27
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	15.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07717 (1-27)

```
Qy        384 CAGGATGCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnAspAlaProProLeuProValProGlyValLeuLeuLysGluPheThrValSerGly 20

Qy        444 AACATACTGACTATCCGACTG 464
              |||||||||||||||||||||
Db         21 AsnIleLeuThrIleArgLeu 27
```

RESULT 21
AAE07718
ID AAE07718 standard; peptide; 25 AA.
XX
AC AAE07718;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #4.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.

XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 25 AA;

Alignment Scores:

Pred. No.:	11.8	Length:	25
Score:	25.00	Matches:	25
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	13.89%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07718 (1-25)

```
Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATA 449
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGluPheThrValSerGlyAsnIle 20

Qy        450 CTGACTATCCGACTG 464
              |||||||||||||||
Db         21 LeuThrIleArgLeu 25
```

RESULT 22
ADD71521
ID ADD71521 standard; peptide; 25 AA.
XX
AC ADD71521;
XX
DT 15-JAN-2004 (first entry)
XX
DE HLA-DP4 binding peptide ligand #83.
XX
KW cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW diabetes; allergy; graft rejection.
XX
OS Synthetic.
XX
PN FR2830940-A1.
XX
PD 18-APR-2003.
XX
PF 17-OCT-2001; 2001FR-00013352.
XX
PR 17-OCT-2001; 2001FR-00013352.
XX
PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE.
PA (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI Maillere B, Castelli F, Buhot C, Georges B;
XX
DR WPI; 2003-395920/38.
XX
PT Process for selecting ligands for human leukocyte antigen DP4, useful as
PT immunomodulators for treating e.g. tumors, based on inhibition of
PT binding.
XX
PS Disclosure; SEQ ID NO 83; 70pp; French.
XX
CC The invention relates to a process for selecting ligands (A) of HLA
CC (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC with a labelled peptide (I) in presence of different concentrations of
CC test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC complexes by measuring a signal from the label; and (d) selecting
CC compounds having binding IC50 less than 1000 nM, corresponding to the
CC concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC them, are useful as immunomodulators, including uses in vaccines against
CC pathogens and tumor cells, also for treating autoimmune diseases
CC (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC (A) are useful as reagents for diagnosing the immune status of an
CC individual, while labelled complexes of DP4 with (A) are used to select
CC antigen-specific CD4+ T cells. The method identifies ligands specific for
CC HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC binding ligands. This sequence represents an example of a peptide ligand
CC of the invention. The peptides are labelled (biotinylated) at their N-
CC termini.
XX
SQ Sequence 25 AA;

Alignment Scores:

Pred. No.:	11.8	Length:	25
Score:	25.00	Matches:	25
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	13.89%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD71521 (1-25)

```
Qy        408 CCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTGACT 467
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ProGlyValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeuThr 20

Qy        468 GCTGCAGACCACCGC 482
              |||||||||||||||
Db         21 AlaAlaAspHisArg 25
```

RESULT 23
ADD71522
ID ADD71522 standard; peptide; 25 AA.
XX
AC ADD71522;
XX
DT 15-JAN-2004 (first entry)
XX
DE HLA-DP4 binding peptide ligand #84.
XX

```
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Claim 14; SEQ ID NO 84; 70pp; French.
XX
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 25 AA;

Alignment Scores:
Pred. No.:              11.8          Length:         25
Score:                  25.00         Matches:        25
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            13.89%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD71522 (1-25)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCAGAGCTGGCCCGC 371
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAlaGluLeuAlaArg 20

Qy        372 AGGAGCCTGGCCCAG 386
              |||||||||||||||
Db         21 ArgSerLeuAlaGln 25

RESULT 24
ADD71532
ID   ADD71532 standard; peptide; 25 AA.
XX
AC   ADD71532;
XX
DT   15-JAN-2004  (first entry)
XX
DE   HLA-DP4 binding peptide ligand #94.
XX
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Disclosure; SEQ ID NO 94; 70pp; French.
XX
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 25 AA;

Alignment Scores:
Pred. No.:              11.8          Length:         25
Score:                  25.00         Matches:        25
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            13.89%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD71532 (1-25)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCAGAGCTGGCCCGC 371
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAlaGluLeuAlaArg 20

Qy        372 AGGAGCCTGGCCCAG 386
              |||||||||||||||
Db         21 ArgSerLeuAlaGln 25
```

```
RESULT 25
ADD71520
ID   ADD71520 standard; peptide; 23 AA.
XX
AC   ADD71520;
XX
DT   15-JAN-2004  (first entry)
XX
DE   HLA-DP4 binding peptide ligand #82.
XX
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Disclosure; SEQ ID NO 82; 70pp; French.
XX
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 23 AA;

Alignment Scores:
Pred. No.:              17.4          Length:         23
Score:                  23.00         Matches:        23
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            12.78%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD71520 (1-23)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGG 584
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPheLeuProValPheLeuAlaGlnProProSerGly 20

Qy        585 CAGAGGCGC 593
              |||||||||
Db         21 GlnArgArg 23

RESULT 26
ADD71449
ID   ADD71449 standard; peptide; 21 AA.
XX
AC   ADD71449;
XX
DT   15-JAN-2004  (first entry)
XX
DE   HLA-DP4 binding peptide ligand #11.
XX
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Disclosure; SEQ ID NO 11; 70pp; French.
XX
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 21 AA;

Alignment Scores:
Pred. No.:              25.5          Length:         21
Score:                  21.00         Matches:        21
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.67%        Indels:         0
DB:                     1             Gaps:           0
```

```
US-10-023-182-1 (1-752) x ADD71449 (1-21)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCT 575
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProValPheLeuAlaGlnPro 20

Qy        576 CCC 578
              |||
Db         21 Pro 21

RESULT 27
AAY05979
ID   AAY05979 standard; peptide; 20 AA.
XX
AC   AAY05979;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 16; Page 64; 88pp; English.
XX
CC   The present sequence represents a cancer peptide that is based on amino
CC   acid residues 44-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965),
CC   a new and potent tumour antigen capable of eliciting an antigen specific
CC   immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-
CC   3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-
CC   87), are useful as cancer vaccines that protect against cancer. The
CC   invention provides: vectors and host cells (also useful as vaccines); a
CC   method of diagnosis of cancer or precancer; a transgenic animal;
CC   antisense oligonucleotides that inhibit expression of the cancer peptide
CC   or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
CC   useful in diagnostic and detection assays; and methods for preventing or
CC   inhibiting cancer by administering a cancer peptide, with or without an
CC   HLA molecule. The cancer peptides form part of, or are derived from,
CC   cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by
CC   inducing cancer-specific T cells in vitro for subsequent return to a
CC   patient
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:        20
Score:                  20.00         Matches:       20
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            11.11%        Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05979 (1-20)

Qy        180 AGAGGTCCCCGGGGCGCAGGGGCAGCAAGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ArgGlyProArgGlyAlaGlyAlaAlaArgAlaSerGlyProGlyGlyGlyAlaProArg 20

RESULT 28
AAE07744
ID   AAE07744 standard; peptide; 20 AA.
XX
AC   AAE07744;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p156-175 peptide, to identify MHC class II-restricted epitopes.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 3; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p156-
CC   175 peptide used in the identification of putative MHC class II -
CC   restricted epitopes from HLA-DR4-transgenic mice
XX
SQ   Sequence 20 AA;

Alignment Scores:
```

```
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07744 (1-20)

Qy        519 CTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCC 578
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProValPheLeuAlaGlnProPro 20

RESULT 29
AAE07746
ID   AAE07746 standard; peptide; 20 AA.
XX
AC   AAE07746;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p111-130 peptide to generate CD4+T cells specific for NY ESO-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 4; Fig 4B; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p111-
CC   130 peptide used in the generation of human CD4+T cells specific for NY
CC   ESO-1 protein
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07746 (1-20)

Qy        384 CAGGATGCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnAspAlaProProLeuProValProGlyValLeuLeuLysGluPheThrValSerGly 20

RESULT 30
AAE07743
ID   AAE07743 standard; peptide; 20 AA.
XX
AC   AAE07743;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p131-150 peptide, to identify MHC class II-restricted epitopes.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 3; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p131-
CC   150 peptide used in the identification of putative MHC class II -
CC   restricted epitopes from HLA-DR4-transgenic mice
XX
SQ   Sequence 20 AA;
```

```
Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07743 (1-20)

Qy        444 AACATACTGACTATCCGACTGACTGCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGC 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AsnIleLeuThrIleArgLeuThrAlaAlaAspHisArgGlnLeuGlnLeuSerIleSer 20

RESULT 31
AAE07731
ID   AAE07731 standard; peptide; 20 AA.
XX
AC   AAE07731;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #17.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope (ESO p141-160) of human NY ESO-1 protein
XX
SQ   Sequence 20 AA;
```

```
Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07731 (1-20)

Qy        474 GACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTTTCCCTGTTGATG 533
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeuSerLeuLeuMet 20

RESULT 32
AAE07729
ID   AAE07729 standard; peptide; 20 AA.
XX
AC   AAE07729;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #15.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope (ESO p116-135) of human NY ESO-1 protein
XX
SQ   Sequence 20 AA;
```

```
Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07729 (1-20)

Qy        399 CTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATC 458
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIle 20

RESULT 33
AAE07742
ID   AAE07742 standard; peptide; 20 AA.
XX
AC   AAE07742;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p126-145 peptide, to identify MHC class II-restricted epitopes.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 3; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p126-
CC   145 peptide used in the identification of putative MHC class II -
CC   restricted epitopes from HLA-DR4-transgenic mice
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07742 (1-20)

Qy        429 TTCACTGTGTCCGGCAACATACTGACTATCCGACTGACTGCTGCAGACCACCGCCAACTG 488
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 PheThrValSerGlyAsnIleLeuThrIleArgLeuThrAlaAlaAspHisArgGlnLeu 20

RESULT 34
AAE07747
ID   AAE07747 standard; peptide; 20 AA.
XX
AC   AAE07747;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p91-110 peptide to generate CD4+T cells specific for NY ESO-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 4; Fig 4B; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p91-
CC   110 peptide used in the generation of human CD4+T cells specific for NY
CC   ESO-1 protein
```

```
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:                30.8          Length:         20
Score:                    20.00         Matches:        20
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              11.11%        Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07747 (1-20)

Qy        324 TACCTCGCCATGCCTTTCGCGACACCCATGGAAGCAGAGCTGGCCCGCAGGAGCCTGGCC 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TyrLeuAlaMetProPheAlaThrProMetGluAlaGluLeuAlaArgArgSerLeuAla 20

RESULT 35
AAE07741
ID   AAE07741 standard; peptide; 20 AA.
XX
AC   AAE07741;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p82-101 peptide, to identify MHC class II-restricted epitopes.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 3; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p82-
CC   101 peptide used in the identification of putative MHC class II -
CC   restricted epitopes from HLA-DR4-transgenic mice
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:                30.8          Length:         20
Score:                    20.00         Matches:        20
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              11.11%        Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07741 (1-20)

Qy        294 AGGGGGCCGGAGAGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATG 353
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ArgGlyProGluSerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMet 20

RESULT 36
AAE07732
ID   AAE07732 standard; peptide; 20 AA.
XX
AC   AAE07732;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #18.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
```

```
CC   restricted T cell epitope (ESO 161-180) of human NY ESO-1 protein
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:        20
Score:                  20.00         Matches:       20
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            11.11%        Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAE07732 (1-20)

Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TrpIleThrGlnCysPheLeuProValPheLeuAlaGlnProProSerGlyGlnArgArg 20

RESULT 37
AAE07745
ID   AAE07745 standard; peptide; 20 AA.
XX
AC   AAE07745;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human ESO p146-165 peptide, to identify MHC class II-restricted epitopes.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 3; Fig 3; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human ESO p146-
CC   165 peptide used in the identification of putative MHC class II -
CC   restricted epitopes from HLA-DR4-transgenic mice
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:        20
Score:                  20.00         Matches:       20
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            11.11%        Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAE07745 (1-20)

Qy        489 CAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnLeuSerIleSerSerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCys 20

RESULT 38
ADD71448
ID   ADD71448 standard; peptide; 20 AA.
XX
AC   ADD71448;
XX
DT   15-JAN-2004  (first entry)
XX
DE   HLA-DP4 binding peptide ligand #10.
XX
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Disclosure; SEQ ID NO 10; 70pp; French.
XX
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
```

```
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 20 AA;

Alignment Scores:
Pred. No.:              30.8          Length:         20
Score:                  20.00         Matches:        20
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            11.11%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD71448 (1-20)

Qy        531 ATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAGAGG 590
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MetTrpIleThrGlnCysPheLeuProValPheLeuAlaGlnProProSerGlyGlnArg 20

RESULT 39
AAY52435
ID   AAY52435 standard; protein; 18 AA.
XX
AC   AAY52435;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #8.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class II;
KW   T-cell; helper; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 4; Page 22; 49pp; English.
XX
CC   Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major
CC   histocompatibility Class II HLA-DR53 molecules, thereby stimulating
CC   proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially
CC   isolated from an oesophagus squamous cell cancer cDNA library. Tissue
CC   localisation studies revealed it to be expressed at high levels in normal
CC   ovary and testis but not in normal colon, kidney, liver, brain,
CC   oesophagus and skin. It was expressed in certain tumours and tumour cell
CC   lines with some degree of frequency - these included melanoma specimens
CC   and cell lines, and breast and bladder cancer specimens, with expression
CC   in other tumour types being sporadic. These NY-ESO-1-derived peptides may
CC   be used in methods and compositions used for the treatment, diagnosis and
CC   prevention of cancers (such as melanoma, breast cancer, prostate cancer,
CC   lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or
CC   lymphoma) and to stimulate the proliferation of T cells
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:         18
Score:                  18.00         Matches:        18
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            10.00%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY52435 (1-18)

Qy        468 GCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 18

RESULT 40
AAY52439
ID   AAY52439 standard; protein; 18 AA.
XX
AC   AAY52439;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #12.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class II;
KW   T-cell; helper; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 4; Page 22; 49pp; English.
XX
CC   Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major
CC   histocompatibility Class II HLA-DR53 molecules, thereby stimulating
CC   proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially
CC   isolated from an oesophagus squamous cell cancer cDNA library. Tissue
CC   localisation studies revealed it to be expressed at high levels in normal
CC   ovary and testis but not in normal colon, kidney, liver, brain,
CC   oesophagus and skin. It was expressed in certain tumours and tumour cell
CC   lines with some degree of frequency - these included melanoma specimens
CC   and cell lines, and breast and bladder cancer specimens, with expression
CC   in other tumour types being sporadic. These NY-ESO-1-derived peptides may
CC   be used in methods and compositions used for the treatment, diagnosis and
CC   prevention of cancers (such as melanoma, breast cancer, prostate cancer,
CC   lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or
CC   lymphoma) and to stimulate the proliferation of T cells
XX
```

```
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:        18
Score:                  18.00         Matches:       18
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            10.00%        Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY52439 (1-18)

Qy        306 AGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAla 18

RESULT 41
AAY52438
ID   AAY52438 standard; protein; 18 AA.
XX
AC   AAY52438;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #11.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class II;
KW   T-cell; helper; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 4; Page 22; 49pp; English.
XX
CC   Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major
CC   histocompatibility Class II HLA-DR53 molecules, thereby stimulating
CC   proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially
CC   isolated from an oesophagus squamous cell cancer cDNA library. Tissue
CC   localisation studies revealed it to be expressed at high levels in normal
CC   ovary and testis but not in normal colon, kidney, liver, brain,
CC   oesophagus and skin. It was expressed in certain tumours and tumour cell
CC   lines with some degree of frequency - these included melanoma specimens
CC   and cell lines, and breast and bladder cancer specimens, with expression
CC   in other tumour types being sporadic. These NY-ESO-1-derived peptides may
CC   be used in methods and compositions used for the treatment, diagnosis and
CC   prevention of cancers (such as melanoma, breast cancer, prostate cancer,
CC   lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or
CC   lymphoma) and to stimulate the proliferation of T cells
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:        18
Score:                  18.00         Matches:       18
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            10.00%        Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY52438 (1-18)

Qy        252 GGCGCGGCTTCAGGGCTGAATGGATGCTGCAGATGCGGGGCCAGGGGGCCGGAG 305
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlyAlaAlaSerGlyLeuAsnGlyCysCysArgCysGlyAlaArgGlyProGlu 18

RESULT 42
AAY52440
ID   AAY52440 standard; protein; 18 AA.
XX
AC   AAY52440;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #13.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class II;
KW   T-cell; helper; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 4; Page 22; 49pp; English.
XX
CC   Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major
CC   histocompatibility Class II HLA-DR53 molecules, thereby stimulating
CC   proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially
CC   isolated from an oesophagus squamous cell cancer cDNA library. Tissue
CC   localisation studies revealed it to be expressed at high levels in normal
CC   ovary and testis but not in normal colon, kidney, liver, brain,
CC   oesophagus and skin. It was expressed in certain tumours and tumour cell
CC   lines with some degree of frequency - these included melanoma specimens
CC   and cell lines, and breast and bladder cancer specimens, with expression
CC   in other tumour types being sporadic. These NY-ESO-1-derived peptides may
CC   be used in methods and compositions used for the treatment, diagnosis and
CC   prevention of cancers (such as melanoma, breast cancer, prostate cancer,
CC   lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or
CC   lymphoma) and to stimulate the proliferation of T cells
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:        18
```

```
Score:                  18.00          Matches:       18
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            10.00%         Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAY52440 (1-18)

Qy        432 ACTGTGTCCGGCAACATACTGACTATCCGACTGACTGCTGCAGACCACCGCCAA 485
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIleArgLeuThrAlaAlaAspHisArgGln 18

RESULT 43
AAB69941
ID   AAB69941 standard; peptide; 18 AA.
XX
AC   AAB69941;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA-DR53 binding motif #3.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 16; Page 27; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1           Length:        18
Score:                  18.00          Matches:       18
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            10.00%         Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAB69941 (1-18)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATA 449
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLysGluPheThrValSerGlyAsnIle 18

RESULT 44
AAB69942
ID   AAB69942 standard; peptide; 18 AA.
XX
AC   AAB69942;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA-DR53 binding motif #4.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 16; Page 28; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1           Length:        18
Score:                  18.00          Matches:       18
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            10.00%         Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAB69942 (1-18)

Qy        252 GGCGCGGCTTCAGGGCTGAATGGATGCTGCAGATGCGGGGCCAGGGGGCCGGAG 305
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlyAlaAlaSerGlyLeuAsnGlyCysCysArgCysGlyAlaArgGlyProGlu 18
```

```
RESULT 45
AAB69940
ID   AAB69940 standard; peptide; 18 AA.
XX
AC   AAB69940;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA-DR53 binding motif #2.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 16; Page 27; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:         18
Score:                  18.00         Matches:        18
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            10.00%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69940 (1-18)

Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTGACT 467
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeuThr 18

RESULT 46
AAB69944
ID   AAB69944 standard; peptide; 18 AA.
XX
AC   AAB69944;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA-DR53 binding motif #6.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 16; Page 28; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:              44.1          Length:         18
Score:                  18.00         Matches:        18
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            10.00%        Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69944 (1-18)

Qy        432 ACTGTGTCCGGCAACATACTGACTATCCGACTGACTGCTGCAGACCACCGCCAA 485
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIleArgLeuThrAlaAlaAspHisArgGln 18

RESULT 47
AAB69943
ID   AAB69943 standard; peptide; 18 AA.
XX
AC   AAB69943;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA-DR53 binding motif #5.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
```

KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 16; Page 28; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69943 (1-18)

```
Qy        306 AGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAla 18
```

RESULT 48
AAB69939
ID AAB69939 standard; peptide; 18 AA.
XX
AC AAB69939;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA-DR53 binding motif #1.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 16; Page 27; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69939 (1-18)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 18
```

RESULT 49
AAU01539
ID AAU01539 standard; peptide; 18 AA.
XX
AC AAU01539;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #1.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX

PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01539 (1-18)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 18
```

RESULT 50
AAU01543
ID AAU01543 standard; peptide; 18 AA.
XX
AC AAU01543;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #5.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.

XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01543 (1-18)

```
Qy        306 AGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAla 18
```

RESULT 51
AAU01544
ID AAU01544 standard; peptide; 18 AA.
XX
AC AAU01544;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #6.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX

PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01544 (1-18)

```
Qy        432 ACTGTGTCCGGCAACATACTGACTATCCGACTGACTGCTGCAGACCACCGCCAA 485
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIleArgLeuThrAlaAlaAspHisArgGln 18
```

RESULT 52
AAU01542
ID AAU01542 standard; peptide; 18 AA.
XX
AC AAU01542;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #4.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.

XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01542 (1-18)

```
Qy        252 GGCGCGGCTTCAGGGCTGAATGGATGCTGCAGATGCGGGGCCAGGGGGCCGGAG 305
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlyAlaAlaSerGlyLeuAsnGlyCysCysArgCysGlyAlaArgGlyProGlu 18
```

RESULT 53
AAU01540
ID AAU01540 standard; peptide; 18 AA.
XX
AC AAU01540;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #2.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX

PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01540 (1-18)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTGACT 467
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeuThr 18
```

RESULT 54
AAU01541
ID AAU01541 standard; peptide; 18 AA.
XX
AC AAU01541;
XX
DT 18-JUL-2001 (first entry)
XX
DE HLA-DR53 recognising NY-ESO-1 peptide #3.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 13; Page 19; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
CC SSX-2 polypeptides, or fragments of, bind to major histocompatibility
CC complex (MHC) Class II molecules such as human leukocyte antigen-
CC determining region (HLA-DR) molecules and stimulate proliferation of
CC helper T cells. The peptides can be administered to an HLA-DR positive
CC subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
CC NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
CC free form is useful for this stimulation. The nucleic acid is useful for
CC screening for a cancerous condition, which involves contacting a subject
CC sample to a cell line transfected with the immunoreactive cell (helper T
CC cell), where interaction is indicative of cancer. In addition, a sample
CC from a patient (for example, a body fluid or tissue) can be monitored for
CC the amount of the complex present in the bloodstream. This is useful for
CC determining regression, progression or onset of a cancerous condition.
CC The method involves contacting the sample with a radioactive labelled or
CC enzyme labelled monoclonal antibody which specifically binds with the
CC complex
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01541 (1-18)

```
Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATA 449
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLysGluPheThrValSerGlyAsnIle 18
```

RESULT 55
AAE07769
ID AAE07769 standard; peptide; 18 AA.
XX
AC AAE07769;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 HLA DR restricted T cell cancer peptide #1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX

PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 84; Page 84; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC HLA DR restricted T cell cancer peptide
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07769 (1-18)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTGACT 467
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeuThr 18
```

RESULT 56
AAE07770
ID AAE07770 standard; peptide; 18 AA.
XX
AC AAE07770;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 HLA DR restricted T cell cancer peptide #2.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX

PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 84; Page 84; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC HLA DR restricted T cell cancer peptide
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07770 (1-18)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 18
```

RESULT 57
ABG79132
ID ABG79132 standard; peptide; 18 AA.
XX
AC ABG79132;
XX
DT 15-NOV-2002 (first entry)
XX
DE Human NY-ESO-1 class II HLA tumour-restricted antigen peptide #3.
XX
KW Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;
KW lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;
KW Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;
KW kidney cancer; adenocarcinoma; breast cancer; prostate cancer;
KW ovarian cancer; pancreatic cancer; epitope; vaccine; dendritic cell;
KW tumour infiltrating lymphocyte; TIL; human leukocyte antigen; HLA;
KW cytostatic; human.
XX

OS Homo sapiens.
XX
PN WO200264057-A2.
XX
PD 22-AUG-2002.
XX
PF 15-FEB-2002; 2002WO-US005212.
XX
PR 15-FEB-2001; 2001US-0268687P.
XX
PA (BAYU) BAYLOR COLLEGE MEDICINE.
XX
PI Wang R;
XX
DR WPI; 2002-627577/67.
XX
PT Novel composition for treating a disease in an animal, comprises an
PT immune effector cell and cell penetrating peptide associated with an
PT antigen or antibody.
XX
PS Disclosure; Page 22; 61pp; English.
XX
CC The invention relates to a composition (I) comprising an immune effector
CC cell and a cell penetrating peptide (CPP) associated with an antigen or
CC antibody. Also included are (1) a vaccine comprising (I), CPP associated
CC with an antigen, and a pharmaceutically acceptable carrier and (2)
CC preparing a composition for a disease, by providing (I) and CPP
CC associated with an antigen for disease, and introducing the antigen-
CC associated CPP to (I), where antigen enters into the cell. The antigens
CC are, for example, tumour antigen derived epitopes recognised by tumour
CC infiltrating lymphocytes (TIL) of HLA (human leukocyte antigen) class I
CC or II. The composition is useful for enhancing immunity in an animal to a
CC disease, by administering a mature dendritic cell comprising CPP
CC associated with an antigen to disease, to the animal, such that following
CC the administration, animal is protected from disease, where the animal
CC comprises both CD4+ and CD8+ T cells. It is also useful for treating a
CC disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung
CC cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine
CC cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,
CC breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).
CC The animal is further subjected to a cancer treatment including surgery,
CC radiation, chemotherapy or gene therapy. The administration of (I),
CC preferably dendritic cell is prior to, subsequent to or concurrent with,
CC the cancer treatment. The present sequence is a tumour antigen derived
CC epitope for inclusion in the composition of the invention
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABG79132 (1-18)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 18
```

RESULT 58
ADD35557
ID ADD35557 standard; peptide; 18 AA.
XX
AC ADD35557;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:7.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 14; SEQ ID NO 7; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35557 (1-18)

```
Qy        360 GAGCTGGCCCGCAGGAGCCTGGCCCAGGATGCCCCACCGCTTCCCGTGCCAGGG 413
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db          1 GluLeuAlaArgArgSerLeuAlaGlnAspAlaProProLeuProValProGly 18

RESULT 59
ADD35555
ID   ADD35555 standard; peptide; 18 AA.
XX
AC   ADD35555;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:5.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
OS   Homo sapiens.
XX
PN   WO2003068800-A2.
XX
PD   21-AUG-2003.
XX
PF   12-FEB-2003; 2003WO-US004182.
XX
PR   13-FEB-2002; 2002US-0355828P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Jager E,  Knuth A,  Old L,  Gnjatic S;
XX
DR   WPI; 2003-902684/82.
XX
PT   New isolated peptide that binds to an HLA molecule, useful for treating a
PT   subject with a disorder characterized by the presence of complexes of an
PT   HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT   response.
XX
PS   Claim 14; SEQ ID NO 5; 73pp; English.
XX
CC   The present invention describes an isolated peptide (I) consisting of 8-
CC   11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC   B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC   complexes of the peptide and the HLA molecule, where at least 8
CC   contiguous amino acids of the peptide consist of at least 8 contiguous
CC   amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC   described: (1) a composition comprising (I) and a carrier; (2) an
CC   isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC   expression vector comprising the nucleic acid of (2) in operable linkage
CC   with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC   or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC   specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC   of (5); (7) a polytope comprising at least two of (I) that are linked
CC   together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC   isolated tetramer comprising the HLA molecule, biotin and a binding
CC   partner; (10) a composition comprising the tetramer and a carrier; (11)
CC   inducing an immune response in a subject; (12) treating a subject with a
CC   disorder characterised by the presence of complexes of an HLA molecule
CC   and the peptide; (13) a combinatorial library of derivatives of (I),
CC   where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC   for an analogue of (I); (15) an isolated antibody or its fragment that
CC   specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC   soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC   and (17) inducing an immune response on a subject having a disorder
CC   characterised by the presence of the HLA molecule and the peptide. (I)
CC   has cytostatic activity, and can be used in gene therapy. The peptides,
CC   nucleic acid molecules, vectors, compositions, antibodies and methods are
CC   useful for treating a subject with a disorder characterised by the
CC   presence of complexes of an HLA molecule and the peptide, and for
CC   inducing an immune response. The present sequence represents a human NY-
CC   ESO-1 peptide, which is used in the exemplification of the present
CC   invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ   Sequence 18 AA;

Alignment Scores:
Pred. No.:                44.1          Length:          18
Score:                    18.00         Matches:         18
Percent Similarity:       100.00%       Conservative:    0
Best Local Similarity:    100.00%       Mismatches:      0
Query Match:              10.00%        Indels:          0
DB:                       1             Gaps:            0

US-10-023-182-1 (1-752) x ADD35555 (1-18)

Qy        306 AGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrProMetGluAla 18

RESULT 60
ADD35556
ID   ADD35556 standard; peptide; 18 AA.
XX
AC   ADD35556;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:6.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
OS   Homo sapiens.
XX
PN   WO2003068800-A2.
XX
PD   21-AUG-2003.
XX
PF   12-FEB-2003; 2003WO-US004182.
XX
PR   13-FEB-2002; 2002US-0355828P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Jager E,  Knuth A,  Old L,  Gnjatic S;
XX
DR   WPI; 2003-902684/82.
XX
PT   New isolated peptide that binds to an HLA molecule, useful for treating a
PT   subject with a disorder characterized by the presence of complexes of an
PT   HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT   response.
XX
PS   Claim 14; SEQ ID NO 6; 73pp; English.
XX
CC   The present invention describes an isolated peptide (I) consisting of 8-
CC   11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC   B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC   complexes of the peptide and the HLA molecule, where at least 8
CC   contiguous amino acids of the peptide consist of at least 8 contiguous
CC   amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC   described: (1) a composition comprising (I) and a carrier; (2) an
CC   isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC   expression vector comprising the nucleic acid of (2) in operable linkage
CC   with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC   or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC   specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC   of (5); (7) a polytope comprising at least two of (I) that are linked
CC   together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC   isolated tetramer comprising the HLA molecule, biotin and a binding
CC   partner; (10) a composition comprising the tetramer and a carrier; (11)
CC   inducing an immune response in a subject; (12) treating a subject with a
CC   disorder characterised by the presence of complexes of an HLA molecule
CC   and the peptide; (13) a combinatorial library of derivatives of (I),
CC   where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC   for an analogue of (I); (15) an isolated antibody or its fragment that
```

CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 18 AA;

Alignment Scores:

Pred. No.:	44.1	Length:	18
Score:	18.00	Matches:	18
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	10.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35556 (1-18)

```
Qy        324 TACCTCGCCATGCCTTTCGCGACACCCATGGAAGCAGAGCTGGCCCGCAGGAGC 377
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TyrLeuAlaMetProPheAlaThrProMetGluAlaGluLeuAlaArgArgSer 18
```

RESULT 61
AAE07719
ID AAE07719 standard; peptide; 17 AA.
XX
AC AAE07719;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #5.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 17 AA;

Alignment Scores:

Pred. No.:	52.6	Length:	17
Score:	17.00	Matches:	17
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	9.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07719 (1-17)

```
Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCC 440
              |||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGluPheThrValSer 17
```

RESULT 62
AAE07753
ID AAE07753 standard; peptide; 17 AA.
XX
AC AAE07753;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #6 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for

```
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 17 AA;

Alignment Scores:
Pred. No.:                52.6          Length:          17
Score:                    17.00         Matches:         17
Percent Similarity:       100.00%       Conservative:    0
Best Local Similarity:    100.00%       Mismatches:      0
Query Match:              9.44%         Indels:          0
DB:                       1             Gaps:            0

US-10-023-182-1 (1-752) x AAE07753 (1-17)

Qy        393 CCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ProProLeuProValProGlyValLeuLeuLysGluPheThrValSerGly 17

RESULT 63
AAE07735
ID   AAE07735 standard; peptide; 17 AA.
XX
AC   AAE07735;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #19.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Page 17; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 17 AA;

Alignment Scores:
Pred. No.:                52.6          Length:          17
Score:                    17.00         Matches:         17
Percent Similarity:       100.00%       Conservative:    0
Best Local Similarity:    100.00%       Mismatches:      0
Query Match:              9.44%         Indels:          0
DB:                       1             Gaps:            0

US-10-023-182-1 (1-752) x AAE07735 (1-17)

Qy        474 GACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTTTCC 524
              |||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeuSer 17

RESULT 64
AAE07738
ID   AAE07738 standard; peptide; 17 AA.
XX
AC   AAE07738;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #22.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Page 17; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
```

```
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 17 AA;

Alignment Scores:
Pred. No.:              52.6          Length:         17
Score:                  17.00         Matches:        17
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            9.44%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07738 (1-17)

Qy        543 CAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnCysPheLeuProValPheLeuAlaGlnProProSerGlyGlnArgArg 17

RESULT 65
AAE07779
ID   AAE07779 standard; peptide; 16 AA.
XX
AC   AAE07779;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #13 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 16 AA;

Alignment Scores:
Pred. No.:              62.3          Length:         16
Score:                  16.00         Matches:        16
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            8.89%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07779 (1-16)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLysGluPheThrValSerGly 16

RESULT 66
AAE07720
ID   AAE07720 standard; peptide; 16 AA.
XX
AC   AAE07720;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #6.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Page 16; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
```

```
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 16 AA;

Alignment Scores:
Pred. No.:              62.3          Length:         16
Score:                  16.00         Matches:        16
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            8.89%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07720 (1-16)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTG 437
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGluPheThrVal 16

RESULT 67
AAY05978
ID   AAY05978 standard; peptide; 15 AA.
XX
AC   AAY05978;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 15; Page 64; 88pp; English.
XX
CC   The present sequence represents a cancer peptide that corresponds to
CC   amino acid residues 48-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see
CC   AAY05965), a new and potent tumour antigen capable of eliciting an
CC   antigen specific immune response by T cells. Cancer peptides derived from
CC   CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their
CC   variants (see AAY05967-87), are useful as cancer vaccines that protect
CC   against cancer. The invention provides: vectors and host cells (also
CC   useful as vaccines); a method of diagnosis of cancer or precancer; a
CC   transgenic animal; antisense oligonucleotides that inhibit expression of
CC   the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC   cancer peptide, useful in diagnostic and detection assays; and methods
CC   for preventing or inhibiting cancer by administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC   treated by inducing cancer-specific T cells in vitro for subsequent
CC   return to a patient
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:              73.5          Length:         15
Score:                  15.00         Matches:        15
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            8.33%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY05978 (1-15)

Qy        195 GCAGGGGCAGCAAGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaGlyAlaAlaArgAlaSerGlyProGlyGlyGlyAlaProArg 15

RESULT 68
AAU01550
ID   AAU01550 standard; peptide; 15 AA.
XX
AC   AAU01550;
XX
DT   18-JUL-2001  (first entry)
XX
DE   Human NY-ESO-1 tumour rejection antigen precursor peptide #5.
XX
KW   NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW   major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW   human leukocyte antigen-determining region; disease progression;
KW   disease regression; disease onset; body tissue; body fluid; enzyme label;
KW   radioactive label; monoclonal antibody.
XX
OS   Homo sapiens.
XX
PN   WO200123560-A2.
XX
PD   05-APR-2001.
XX
PF   26-SEP-2000; 2000WO-US026411.
XX
PR   29-SEP-1999;   99US-00408036.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M;
XX
DR   WPI; 2001-266156/27.
XX
PT   Polypeptides binding to major histocompatibility complex class II human
PT   leukocyte antigen-determining region molecule having amino acid sequence
PT   found in tumor rejection antigen precursor used for stimulating
PT   proliferation of helper T cells.
XX
PS   Claim 5; Page 38; 62pp; English.
XX
CC   The sequence represents a human NY-ESO-1 tumour rejection antigen
CC   precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,
CC   bind to major histocompatibility complex (MHC) Class II molecules such as
```

CC human leukocyte antigen-determining region (HLA-DR) molecules and
CC stimulate proliferation of helper T cells. The peptides can be
CC administered to an HLA-DR positive subject in order to stimulate the
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed
CC on the surface of a cell or present in free form is useful for this
CC stimulation. The nucleic acid is useful for screening for a cancerous
CC condition, which involves contacting a subject sample to a cell line
CC transfected with the immunoreactive cell (helper T cell), where
CC interaction is indicative of cancer. In addition, a sample from a patient
CC (for example, a body fluid or tissue) can be monitored for the amount of
CC the complex present in the bloodstream. This is useful for determining
CC regression, progression or onset of a cancerous condition. The method
CC involves contacting the sample with a radioactive labelled or enzyme
CC labelled monoclonal antibody which specifically binds with the complex
XX
SQ Sequence 15 AA;

Alignment Scores:

Pred. No.:	73.5	Length:	15
Score:	15.00	Matches:	15
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	8.33%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01550 (1-15)

```
Qy        549 TTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 PheLeuProValPheLeuAlaGlnProProSerGlyGlnArgArg 15
```

RESULT 69
AAE07721
ID AAE07721 standard; peptide; 15 AA.
XX
AC AAE07721;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #7.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 15 AA;

Alignment Scores:

Pred. No.:	73.5	Length:	15
Score:	15.00	Matches:	15
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	8.33%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07721 (1-15)

```
Qy        399 CTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeuLysGluPheThrValSerGly 15
```

RESULT 70
AAE07726
ID AAE07726 standard; peptide; 15 AA.
XX
AC AAE07726;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #12.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes

CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 15 AA;

Alignment Scores:

Pred. No.:	73.5	Length:	15
Score:	15.00	Matches:	15
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	8.33%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07726 (1-15)

```
Qy        417 CTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGA 461
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArg 15
```

RESULT 71
AAE07780
ID AAE07780 standard; peptide; 15 AA.
XX
AC AAE07780;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #14 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes

CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 15 AA;

Alignment Scores:

Pred. No.:	73.5	Length:	15
Score:	15.00	Matches:	15
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	8.33%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07780 (1-15)

```
Qy        399 CTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeuLysGluPheThrValSerGly 15
```

RESULT 72
AAE07727
ID AAE07727 standard; peptide; 15 AA.
XX
AC AAE07727;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #13.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II

```
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:              73.5          Length:         15
Score:                  15.00         Matches:        15
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            8.33%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07727 (1-15)

Qy        420 CTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTG 464
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeu 15

RESULT 73
AAE07786
ID   AAE07786 standard; peptide; 15 AA.
XX
AC   AAE07786;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #20 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
```

```
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:              73.5          Length:         15
Score:                  15.00         Matches:        15
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            8.33%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07786 (1-15)

Qy        417 CTTCTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGA 461
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArg 15

RESULT 74
AAE07787
ID   AAE07787 standard; peptide; 15 AA.
XX
AC   AAE07787;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #21 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
```

```
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:                73.5          Length:          15
Score:                    15.00         Matches:         15
Percent Similarity:       100.00%       Conservative:    0
Best Local Similarity:    100.00%       Mismatches:      0
Query Match:              8.33%         Indels:          0
DB:                       1             Gaps:            0

US-10-023-182-1 (1-752) x AAE07787 (1-15)

Qy        420 CTGAAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTG 464
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeu 15

RESULT 75
AAE07748
ID   AAE07748 standard; peptide; 15 AA.
XX
AC   AAE07748;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #1 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:                73.5          Length:          15
Score:                    15.00         Matches:         15
Percent Similarity:       100.00%       Conservative:    0
Best Local Similarity:    100.00%       Mismatches:      0
Query Match:              8.33%         Indels:          0
DB:                       1             Gaps:            0

US-10-023-182-1 (1-752) x AAE07748 (1-15)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACT 434
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGluPheThr 15

RESULT 76
ADD71533
ID   ADD71533 standard; peptide; 15 AA.
XX
AC   ADD71533;
XX
DT   15-JAN-2004  (first entry)
XX
DE   HLA-DP4 binding peptide ligand #95.
XX
KW   cytostatic; immunostimulant; immunosuppressive; neuroprotective;
KW   antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
KW   immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KW   diabetes; allergy; graft rejection.
XX
OS   Synthetic.
XX
PN   FR2830940-A1.
XX
PD   18-APR-2003.
XX
PF   17-OCT-2001; 2001FR-00013352.
XX
PR   17-OCT-2001; 2001FR-00013352.
XX
PA   (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
PA   (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI   Maillere B,  Castelli F,  Buhot C,  Georges B;
XX
DR   WPI; 2003-395920/38.
XX
PT   Process for selecting ligands for human leukocyte antigen DP4, useful as
PT   immunomodulators for treating e.g. tumors, based on inhibition of
PT   binding.
XX
PS   Disclosure; SEQ ID NO 95; 70pp; French.
XX
```

```
CC   The invention relates to a process for selecting ligands (A) of HLA
CC   (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
CC   with a labelled peptide (I) in presence of different concentrations of
CC   test compounds; (b) separating complexes formed; (c) determining DP4-(I)
CC   complexes by measuring a signal from the label; and (d) selecting
CC   compounds having binding IC50 less than 1000 nM, corresponding to the
CC   concentration required to inhibit 50 % binding of (I). (I) has signal-to-
CC   noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
CC   activation of T cells, or their anergy. (A), or nucleic acid that encodes
CC   them, are useful as immunomodulators, including uses in vaccines against
CC   pathogens and tumor cells, also for treating autoimmune diseases
CC   (multiple sclerosis and type I diabetes), allergy and graft rejection.
CC   (A) are useful as reagents for diagnosing the immune status of an
CC   individual, while labelled complexes of DP4 with (A) are used to select
CC   antigen-specific CD4+ T cells. The method identifies ligands specific for
CC   HLA-DP4 and allows exact definition of the binding motif shared by DP4
CC   binding ligands. This sequence represents an example of a peptide ligand
CC   of the invention. The peptides are labelled (biotinylated) at their N-
CC   termini.
XX
SQ   Sequence 15 AA;

Alignment Scores:
Pred. No.:                73.5          Length:         15
Score:                    15.00         Matches:        15
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              8.33%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x ADD71533 (1-15)

Qy        549 TTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              |||||||||||||||||||||||||||||||||||||||||||||
Db          1 PheLeuProValPheLeuAlaGlnProProSerGlyGlnArgArg 15

RESULT 77
AAY05986
ID   AAY05986 standard; peptide; 14 AA.
XX
AC   AAY05986;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 25; Page 50; 88pp; English.
XX
CC   The present sequence represents a cancer peptide that corresponds to
CC   amino acid residues 49-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see
CC   AAY05965), a new and potent tumour antigen capable of eliciting an
CC   antigen specific immune response by T cells. Cancer peptides derived from
CC   CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their
CC   variants (see AAY05967-87), are useful as cancer vaccines that protect
CC   against cancer. The invention provides: vectors and host cells (also
CC   useful as vaccines); a method of diagnosis of cancer or precancer; a
CC   transgenic animal; antisense oligonucleotides that inhibit expression of
CC   the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC   cancer peptide, useful in diagnostic and detection assays; and methods
CC   for preventing or inhibiting cancer by administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC   treated by inducing cancer-specific T cells in vitro for subsequent
CC   return to a patient
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:                86.2          Length:         14
Score:                    14.00         Matches:        14
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              7.78%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x AAY05986 (1-14)

Qy        198 GGGGCAGCAAGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 GlyAlaAlaArgAlaSerGlyProGlyGlyGlyAlaProArg 14

RESULT 78
AAU01549
ID   AAU01549 standard; peptide; 14 AA.
XX
AC   AAU01549;
XX
DT   18-JUL-2001  (first entry)
XX
DE   Human NY-ESO-1 tumour rejection antigen precursor peptide #4.
XX
KW   NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW   major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW   human leukocyte antigen-determining region; disease progression;
KW   disease regression; disease onset; body tissue; body fluid; enzyme label;
KW   radioactive label; monoclonal antibody.
XX
OS   Homo sapiens.
XX
PN   WO200123560-A2.
XX
PD   05-APR-2001.
XX
PF   26-SEP-2000; 2000WO-US026411.
XX
PR   29-SEP-1999;   99US-00408036.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M;
XX
DR   WPI; 2001-266156/27.
XX
PT   Polypeptides binding to major histocompatibility complex class II human
PT   leukocyte antigen-determining region molecule having amino acid sequence
PT   found in tumor rejection antigen precursor used for stimulating
PT   proliferation of helper T cells.
```

XX
PS Claim 5; Page 38; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,
CC bind to major histocompatibility complex (MHC) Class II molecules such as
CC human leukocyte antigen-determining region (HLA-DR) molecules and
CC stimulate proliferation of helper T cells. The peptides can be
CC administered to an HLA-DR positive subject in order to stimulate the
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed
CC on the surface of a cell or present in free form is useful for this
CC stimulation. The nucleic acid is useful for screening for a cancerous
CC condition, which involves contacting a subject sample to a cell line
CC transfected with the immunoreactive cell (helper T cell), where
CC interaction is indicative of cancer. In addition, a sample from a patient
CC (for example, a body fluid or tissue) can be monitored for the amount of
CC the complex present in the bloodstream. This is useful for determining
CC regression, progression or onset of a cancerous condition. The method
CC involves contacting the sample with a radioactive labelled or enzyme
CC labelled monoclonal antibody which specifically binds with the complex
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01549 (1-14)

```
Qy        306 AGCCGCCTGCTTGAGTTCTACCTCGCCATGCCTTTCGCGACA 347
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThr 14
```

RESULT 79
AAE07762
ID AAE07762 standard; peptide; 14 AA.
XX
AC AAE07762;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #6 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.

XX
PS Claim 65; Page 82; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07762 (1-14)

```
Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCT 575
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 TrpIleThrGlnCysPheLeuProValPheLeuAlaGlnPro 14
```

RESULT 80
AAE07740
ID AAE07740 standard; peptide; 14 AA.
XX
AC AAE07740;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #24.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.

```
XX
PS   Claim 4; Page 17; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:         14
Score:                  14.00         Matches:        14
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            7.78%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07740 (1-14)

Qy        546 TGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGGCAG 587
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 CysPheLeuProValPheLeuAlaGlnProProSerGlyGln 14

RESULT 81
AAE07772
ID   AAE07772 standard; peptide; 14 AA.
XX
AC   AAE07772;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #8.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 12; Fig 11A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC   cells
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:         14
Score:                  14.00         Matches:        14
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            7.78%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07772 (1-14)

Qy        543 CAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCAGGG 584
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnCysPheLeuProValPheLeuAlaGlnProProSerGly 14

RESULT 82
AAE07788
ID   AAE07788 standard; peptide; 14 AA.
XX
AC   AAE07788;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #22 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
```

PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07788 (1-14)

```
Qy        423 AAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTG 464
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 LysGluPheThrValSerGlyAsnIleLeuThrIleArgLeu 14
```

RESULT 83
AAE07764
ID AAE07764 standard; peptide; 14 AA.
XX
AC AAE07764;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #8 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07764 (1-14)

```
Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeu 14
```

RESULT 84
AAE07722
ID AAE07722 standard; peptide; 14 AA.
XX
AC AAE07722;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #8.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07722 (1-14)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPheThrValSerGly 14
```

RESULT 85
AAE07763
ID AAE07763 standard; peptide; 14 AA.
XX
AC AAE07763;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #7 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07763 (1-14)

```
Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCC 578
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPheLeuAlaGlnProPro 14
```

RESULT 86
AAE07766
ID AAE07766 standard; peptide; 14 AA.
XX
AC AAE07766;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #10 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07766 (1-14)

```
Qy        519 CTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTG 560
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProVal 14
```

RESULT 87
AAE07728
ID AAE07728 standard; peptide; 14 AA.
XX
AC AAE07728;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #14.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07728 (1-14)

```
Qy        423 AAGGAGTTCACTGTGTCCGGCAACATACTGACTATCCGACTG 464
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 LysGluPheThrValSerGlyAsnIleLeuThrIleArgLeu 14
```

RESULT 88
AAE07758
ID AAE07758 standard; peptide; 14 AA.
XX
AC AAE07758;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 protein HLA-DP restricted T cell epitope, ESO p157-170.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 72; Page 82; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein. This epitope is designated
CC as wild type ESO p157-170
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07758 (1-14)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTT 563
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeuProValPhe 14
```

RESULT 89
AAE07771
ID AAE07771 standard; peptide; 14 AA.
XX
AC AAE07771;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #7.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 12; Fig 11A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC cells
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07771 (1-14)

```
Qy        540 ACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAGCCTCCCTCA 581
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 ThrGlnCysPheLeuProValPheLeuAlaGlnProProSer 14
```

RESULT 90
AAE07736
ID AAE07736 standard; peptide; 14 AA.
XX
AC AAE07736;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #20.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.

XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 17; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07736 (1-14)

```
Qy        474 GACCACCGCCAACTGCAGCTCTCCATCAGCTCCTGTCTCCAG 515
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 AspHisArgGlnLeuGlnLeuSerIleSerSerCysLeuGln 14
```

RESULT 91
AAE07765
ID AAE07765 standard; peptide; 14 AA.
XX
AC AAE07765;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #9 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.

XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07765 (1-14)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTTCTGCCC 557
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuPro 14
```

RESULT 92
AAE07775
ID AAE07775 standard; peptide; 14 AA.
XX
AC AAE07775;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #11.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.

```
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 12; Fig 11A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC   cells
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:        14
Score:                  14.00         Matches:       14
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            7.78%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAE07775 (1-14)

Qy        504 TCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAG 545
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 SerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGln 14

RESULT 93
AAE07749
ID   AAE07749 standard; peptide; 14 AA.
XX
AC   AAE07749;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #2 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:        14
Score:                  14.00         Matches:       14
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            7.78%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAE07749 (1-14)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGluPhe 14

RESULT 94
AAE07759
ID   AAE07759 standard; peptide; 14 AA.
XX
AC   AAE07759;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human HLA-DP restricted T cell epitope #3 of NY ESO-1 protein.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
```

XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 65; Page 82; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07759 (1-14)

```
Qy        525 CTGTTGATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTG 566
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPheLeuProValPheLeu 14
```

RESULT 95
AAE07773
ID AAE07773 standard; peptide; 14 AA.
XX
AC AAE07773;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #9.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;

XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 12; Fig 11A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC cells
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07773 (1-14)

```
Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGCTTT 551
              |||||||||||||||||||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPhe 14
```

RESULT 96
AAE07774
ID AAE07774 standard; peptide; 14 AA.
XX
AC AAE07774;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #10.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX

```
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 12; Fig 11A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC   cells
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:         14
Score:                  14.00         Matches:        14
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            7.78%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07774 (1-14)

Qy        507 TGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 CysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCys 14

RESULT 97
AAE07761
ID   AAE07761 standard; peptide; 14 AA.
XX
AC   AAE07761;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human HLA-DP restricted T cell epitope #5 of NY ESO-1 protein.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
```

```
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 65; Page 82; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human HLA-DP
CC   restricted T cell epitope of NY ESO-1 protein
XX
SQ   Sequence 14 AA;

Alignment Scores:
Pred. No.:              86.2          Length:         14
Score:                  14.00         Matches:        14
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            7.78%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07761 (1-14)

Qy        531 ATGTGGATCACGCAGTGCTTTCTGCCCGTGTTTTTGGCTCAG 572
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 MetTrpIleThrGlnCysPheLeuProValPheLeuAlaGln 14

RESULT 98
AAE07781
ID   AAE07781 standard; peptide; 14 AA.
XX
AC   AAE07781;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #15 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
```

XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 14 AA;

Alignment Scores:

Pred. No.:	86.2	Length:	14
Score:	14.00	Matches:	14
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.78%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07781 (1-14)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPheThrValSerGly 14
```

RESULT 99
AAY05985
ID AAY05985 standard; peptide; 13 AA.
XX
AC AAY05985;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Disclosure; Page 12; 88pp; English.
XX
CC The present sequence represents a cancer peptide that corresponds to
CC amino acid residues 15-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see
CC AAY05966), a new and potent tumour antigen capable of eliciting an
CC antigen specific immune response by T cells. Cancer peptides derived from
CC CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their
CC variants (see AAY05967-87), are useful as cancer vaccines that protect
CC against cancer. The invention provides: vectors and host cells (also
CC useful as vaccines); a method of diagnosis of cancer or precancer; a
CC transgenic animal; antisense oligonucleotides that inhibit expression of
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC cancer peptide, useful in diagnostic and detection assays; and methods
CC for preventing or inhibiting cancer by administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC treated by inducing cancer-specific T cells in vitro for subsequent
CC return to a patient
XX
SQ Sequence 13 AA;

Alignment Scores:

Pred. No.:	101	Length:	13
Score:	13.00	Matches:	13
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.22%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05985 (1-13)

```
Qy        136 GGGGCAATGCTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              |||||||||||||||||||||||||||||||||||||||
Db          1 GlyAlaMetLeuAlaAlaGlnGluArgArgValProArg 13
```

RESULT 100
AAY06064
ID AAY06064 standard; peptide; 13 AA.
XX
AC AAY06064;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX

```
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 11; Page 50; 88pp; English.
XX
CC   This peptide corresponds to amino acid residues 50-62 of human NY ESO-
CC   1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC   capable of eliciting an antigen specific immune response by T cells.
CC   Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC   and their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 13 AA;

Alignment Scores:
Pred. No.:                101           Length:         13
Score:                    13.00         Matches:        13
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              7.22%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06064 (1-13)

Qy        201 GCAGCAAGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              |||||||||||||||||||||||||||||||||||||||
Db          1 AlaAlaArgAlaSerGlyProGlyGlyGlyAlaProArg 13

RESULT 101
AAE07750
ID   AAE07750 standard; peptide; 13 AA.
XX
AC   AAE07750;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #3 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 13 AA;

Alignment Scores:
Pred. No.:                101           Length:         13
Score:                    13.00         Matches:        13
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              7.22%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x AAE07750 (1-13)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAGGAG 428
              |||||||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLysGlu 13

RESULT 102
AAE07776
ID   AAE07776 standard; peptide; 13 AA.
XX
AC   AAE07776;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #12.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
```

XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 12; Fig 11A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC cells
XX
SQ Sequence 13 AA;

Alignment Scores:

Pred. No.:	101	Length:	13
Score:	13.00	Matches:	13
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.22%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07776 (1-13)

```
Qy        504 TCCTGTCTCCAGCAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||||||||||||||
Db          1 SerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThr 13
```

RESULT 103
AAE07737
ID AAE07737 standard; peptide; 13 AA.
XX
AC AAE07737;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #21.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 17; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 13 AA;

Alignment Scores:

Pred. No.:	101	Length:	13
Score:	13.00	Matches:	13
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	7.22%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07737 (1-13)

```
Qy        483 CAACTGCAGCTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              |||||||||||||||||||||||||||||||||||||||
Db          1 GlnLeuGlnLeuSerIleSerSerCysLeuGlnGlnLeu 13
```

RESULT 104
AAE07723
ID AAE07723 standard; peptide; 13 AA.
XX
AC AAE07723;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #9.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX

```
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Page 16; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 13 AA;

Alignment Scores:
Pred. No.:              101          Length:         13
Score:                  13.00        Matches:        13
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            7.22%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAE07723 (1-13)

Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPheThrValSerGly 13

RESULT 105
AAE07782
ID   AAE07782 standard; peptide; 13 AA.
XX
AC   AAE07782;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #16 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 13 AA;

Alignment Scores:
Pred. No.:              101          Length:         13
Score:                  13.00        Matches:        13
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            7.22%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAE07782 (1-13)

Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPheThrValSerGly 13

RESULT 106
AAY06065
ID   AAY06065 standard; peptide; 12 AA.
XX
AC   AAY06065;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
```

PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 11; Page 50; 88pp; English.
XX
CC This peptide corresponds to amino acid residues 51-62 of human NY ESO-
CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC capable of eliciting an antigen specific immune response by T cells.
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC and their variants, are useful as cancer vaccines. A claimed method of
CC preventing or inhibiting cancer involves administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 12 AA;

Alignment Scores:

Pred. No.:	117	Length:	12
Score:	12.00	Matches:	12
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.67%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06065 (1-12)

```
Qy        204 GCAAGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||||||||
Db          1 AlaArgAlaSerGlyProGlyGlyGlyAlaProArg 12
```

RESULT 107
AAY05984
ID AAY05984 standard; peptide; 12 AA.
XX
AC AAY05984;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Disclosure; Page 12; 88pp; English.
XX
CC The present sequence represents a cancer peptide that corresponds to
CC amino acid residues 16-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see
CC AAY05966), a new and potent tumour antigen capable of eliciting an
CC antigen specific immune response by T cells. Cancer peptides derived from
CC CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their
CC variants (see AAY05967-87), are useful as cancer vaccines that protect
CC against cancer. The invention provides: vectors and host cells (also
CC useful as vaccines); a method of diagnosis of cancer or precancer; a
CC transgenic animal; antisense oligonucleotides that inhibit expression of
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC cancer peptide, useful in diagnostic and detection assays; and methods
CC for preventing or inhibiting cancer by administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC treated by inducing cancer-specific T cells in vitro for subsequent
CC return to a patient
XX
SQ Sequence 12 AA;

Alignment Scores:

Pred. No.:	117	Length:	12
Score:	12.00	Matches:	12
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.67%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05984 (1-12)

```
Qy        139 GCAATGCTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              ||||||||||||||||||||||||||||||||||||
Db          1 AlaMetLeuAlaAlaGlnGluArgArgValProArg 12
```

RESULT 108
AAE07724
ID AAE07724 standard; peptide; 12 AA.
XX
AC AAE07724;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #10.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.

XX
PS Claim 4; Page 16; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 12 AA;

Alignment Scores:

Pred. No.:	117	Length:	12
Score:	12.00	Matches:	12
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.67%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07724 (1-12)

```
Qy        408 CCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||
Db          1 ProGlyValLeuLeuLysGluPheThrValSerGly 12
```

RESULT 109
AAE07783
ID AAE07783 standard; peptide; 12 AA.
XX
AC AAE07783;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #17 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.

XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 12 AA;

Alignment Scores:

Pred. No.:	117	Length:	12
Score:	12.00	Matches:	12
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.67%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07783 (1-12)

```
Qy        408 CCAGGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||||||||||
Db          1 ProGlyValLeuLeuLysGluPheThrValSerGly 12
```

RESULT 110
AAE07751
ID AAE07751 standard; peptide; 12 AA.
XX
AC AAE07751;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #4 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as

PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 12 AA;

Alignment Scores:

Pred. No.:	117	Length:	12
Score:	12.00	Matches:	12
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.67%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07751 (1-12)

```
Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTGAAG 425
              |||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeuLys 12
```

RESULT 111
AAW62585
ID AAW62585 standard; peptide; 11 AA.
XX
AC AAW62585;
XX
DT 17-SEP-1998 (first entry)
XX
DE Cancer associated antigen peptide.
XX
KW Cancer associated antigen; NY-ESO-1; regression; progression; onset;
KW cancer; treatment; diagnosis.
XX
OS Synthetic.
OS Homo sapiens.
XX
PN WO9814464-A1.
XX
PD 09-APR-1998.
XX
PF 15-SEP-1997; 97WO-US016335.
XX
PR 03-OCT-1996; 96US-00725182.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Chen Y, Scanlan M, Gure A, Old LJ, Jager E, Knuth A;
PI Drijfhout JW;
XX
DR WPI; 1998-286417/25.
XX
PT New isolated cancer associated antigen - is used to develop products for
PT the diagnosis and treatment of cancers and for monitoring cancer therapy.
XX
PS Claim 33; Page 17; 49pp; English.
XX
CC Peptides AAW62585-87 are derived from cancer associated antigen NY-ESO-1,
CC and are stimulators of cytotoxic T-cells. The specification describes a
CC method for determining regression, progression of onset of a cancerous
CC condition, comprising monitoring a sample from a patient with the
CC cancerous condition for a parameter selected from NY-ESO-1 protein, a
CC peptide derived from NY-ESO-1 protein and cytolytic T cells specific for
CC the peptide and an MHC molecule with which it non-covalently complexes.
CC Methods for the treatment of a cancerous condition are also described.
CC The NY-ESO-1 protein and peptides derived from it can be used for
CC diagnosis and treatment of cancers and to monitor the efficacy of a
CC therapeutic regime
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAW62585 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 112
AAY05983
ID AAY05983 standard; peptide; 11 AA.
XX
AC AAY05983;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Disclosure; Page 12; 88pp; English.
XX
CC The present sequence represents a cancer peptide that corresponds to
CC amino acid residues 17-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see
CC AAY05966), a new and potent tumour antigen capable of eliciting an
CC antigen specific immune response by T cells. Cancer peptides derived from
CC CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their

```
CC   variants (see AAY05967-87), are useful as cancer vaccines that protect
CC   against cancer. The invention provides: vectors and host cells (also
CC   useful as vaccines); a method of diagnosis of cancer or precancer; a
CC   transgenic animal; antisense oligonucleotides that inhibit expression of
CC   the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC   cancer peptide, useful in diagnostic and detection assays; and methods
CC   for preventing or inhibiting cancer by administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC   treated by inducing cancer-specific T cells in vitro for subsequent
CC   return to a patient
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:         11
Score:                  11.00         Matches:        11
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            6.11%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY05983 (1-11)

Qy        142 ATGCTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              ||||||||||||||||||||||||||||||||
Db          1 MetLeuAlaAlaGlnGluArgArgValProArg 11

RESULT 113
AAY06068
ID   AAY06068 standard; peptide; 11 AA.
XX
AC   AAY06068;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 11; Page 50; 88pp; English.
XX
CC   This peptide corresponds to amino acid residues 53-63 of human NY ESO-
CC   1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC   capable of eliciting an antigen specific immune response by T cells.
CC   Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC   and their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:         11
Score:                  11.00         Matches:        11
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            6.11%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06068 (1-11)

Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGGGGT 242
              ||||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArgGly 11

RESULT 114
AAY06066
ID   AAY06066 standard; peptide; 11 AA.
XX
AC   AAY06066;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 11; Page 50; 88pp; English.
XX
CC   This peptide corresponds to amino acid residues 52-62 of human NY ESO-
CC   1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC   capable of eliciting an antigen specific immune response by T cells.
CC   Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC   and their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
```

```
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAY06066 (1-11)

Qy        207 AGGGCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||||
Db          1 ArgAlaSerGlyProGlyGlyGlyAlaProArg 11

RESULT 115
AAY01761
ID   AAY01761 standard; peptide; 11 AA.
XX
AC   AAY01761;
XX
DT   25-JUN-1999  (first entry)
XX
DE   Exemplary antigenic peptide derived from NY-ESO-1.
XX
KW   MAGE-3; tumour associated gene; human leucocyte antigen Class II;
KW   autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;
KW   osteosarcoma; leukemia; carcinoma.
XX
OS   Homo sapiens.
XX
PN   WO9914326-A1.
XX
PD   25-MAR-1999.
XX
PF   04-SEP-1998;   98WO-US018601.
XX
PR   12-SEP-1997;   97US-00928615.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI   Thielemans K,  Heirman C,  Corthals J,  Chaux P,  Stroobant V;
PI   Boon-Falleur T,  Van Der Bruggen P,  Luiten R;
XX
DR   WPI; 1999-244031/20.
XX
PT   Isolated peptides that bind to human leucocyte antigen class II
PT   molecules.
XX
PS   Disclosure; Page 29; 88pp; English.
XX
CC   The present sequence represents an exemplary tumour associated peptide
CC   antigen. The specification describes a MAGE-3 tumour associated gene.
CC   Peptides (AAY01721-25) that bind human leucocyte antigen (HLA) Class II
CC   molecules can be derived from the MAGE-3 protein. These peptides and
CC   autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA
CC   Class II, are used to treat MAGE-3 related diseases, particularly cancers
CC   (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).
CC   The peptides are also used to produce specific antibodies. Detection of
CC   of the peptides, e.g. in binding assays, particularly with antibodies, is
CC   used for diagnosis of such diseases
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAY01761 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 116
AAY52431
ID   AAY52431 standard; peptide; 11 AA.
XX
AC   AAY52431;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #4.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class I;
KW   T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 60; Page 18; 49pp; English.
XX
CC   Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIT
CC   (AAY52441). These sequences can bind to MHC (major histocompatibility
CC   Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic
CC   T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus
CC   squamous cell cancer cDNA library. Tissue localisation studies revealed
CC   it to be expressed at high levels in normal ovary and testis but not in
CC   normal colon, kidney, liver, brain, oesophagus and skin. It was expressed
CC   in certain tumours and tumour cell lines with some degree of frequency -
CC   these included melanoma specimens and cell lines, and breast and bladder
CC   cancer specimens, with expression in other tumour types being sporadic.
CC   These NY-ESO-1-derived peptides may be used in methods and compositions
CC   used for the treatment, diagnosis and prevention of cancers (such as
CC   melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian
CC   cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the
CC   proliferation of T cells
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0
```

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US-10-023-182-1 (1-752) x AAY52431 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 117
AAB22790
ID   AAB22790 standard; peptide; 11 AA.
XX
AC   AAB22790;
XX
DT   22-DEC-2000  (first entry)
XX
DE   NY-ESO-1 peptide epitope, SEQ ID NO:1.
XX
KW   NY-ESO-1; epitope; CTL response; cytotoxic T lymphocyte; vaccine;
KW   immunogenic; adjuvant coadministration; microbial infection;
KW   tuberculosis; HIV; hepatitis B virus; hepatitis C virus; cancer.
XX
OS   Unidentified.
XX
PN   WO200048630-A1.
XX
PD   24-AUG-2000.
XX
PF   17-FEB-2000; 2000WO-AU000110.
XX
PR   17-FEB-1999;   99AU-00008735.
PR   27-JUL-1999;   99AU-00001861.
XX
PA   (CSLC-) CSL LTD.
XX
PI   Cox JC,  Drane DP;
XX
DR   WPI; 2000-571930/53.
XX
PT   Immunogenic complexes comprising negatively charged organic carrier
PT   adjuvants and positively charged antigens for use as vaccines against
PT   microbial infection and cancer.
XX
PS   Example 4; Fig 5a; 111pp; English.
XX
CC   The invention relates to a novel immunogenic complex comprising a charged
CC   organic carrier and a charged antigen which are electrostatically
CC   associated. The complex induces a cytotoxic T lymphocyte (CTL) response.
CC   The complex and/or vaccine can be used to treat a disease in a mammal,
CC   where the complex/vaccine elicits, induces or otherwise facilitates an
CC   immune response which inhibits, halts, delays or prevents the onset or
CC   progression of the disease condition. In particular, the disease is a
CC   condition resulting form a microbial infection or cancer. Microbial
CC   infections which may be treated using the immunogenic complex include
CC   human immunodeficiency virus (HIV), hepatitis B, hepatitis C,
CC   tuberculosis or a parasitic condition, and cancers which may be treated
CC   include melanoma, prostate cancer or breast cancer. The complexes and
CC   vaccines simultaneously co-deliver antigen and adjuvant to the same
CC   antigen presenting cell, which is often essential for induction of
CC   appropriate immune responses. Sequences AAB22790-B22791 represent peptide
CC   epitopes of the positively charged protein NY-ESO-1 used in an
CC   exemplification of the invention
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:        11
Score:                  11.00         Matches:       11
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            6.11%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB22790 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 118
AAY70855
ID   AAY70855 standard; peptide; 11 AA.
XX
AC   AAY70855;
XX
DT   31-JUL-2000  (first entry)
XX
DE   CTL epitope-1 of human CAMEL protein.
XX
KW   CAMEL; CTL-recognised Antigen on MELanoma; cytotoxic T lymphocyte; CTL;
KW   tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;
KW   cancer; immunotherapy; immunogenic peptide; immune response.
XX
OS   Homo sapiens.
XX
PN   WO200023584-A1.
XX
PD   27-APR-2000.
XX
PF   15-OCT-1999;   99WO-EP007832.
XX
PR   16-OCT-1998;   98EP-00119583.
XX
PA   (BOEH ) BOEHRINGER INGELHEIM INT GMBH.
PA   (UYHO-) UNIV HOSPITAL LEIDEN.
XX
PI   Schrier PI,  Aarnoudse CA,  Heider K,  Klade C;
XX
DR   WPI; 2000-339685/29.
XX
PT   Tumor-associated antigen useful for cancer immunotherapy is encoded by
PT   the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
XX
PS   Claim 4; Page 34; 73pp; English.
XX
CC   The present sequence is an immunogenic peptide of human tumour-associated
CC   antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised Antigen on
CC   MELanoma). This peptide is a CTL epitope, that has the ability to elicit
CC   a CTL response. It corresponds to residues 1-11 of the CAMEL protein.
CC   CAMEL protein is encoded by the LAGE-1 gene, a tumour-specific antigen.
CC   It is different from the LAGE-1 protein, since it is translated from a
CC   different open reading frame (ORF-1). It shows strong homology with NY-
CC   ESO-1, a melanoma specific tumour antigen. The tumour-associated antigen
CC   displayed on melanoma cells is recognised by cytotoxic T lymphocytes.
CC   CAMEL is expressed in tumour cell lines, tumour tissues (e.g. breast and
CC   lung) and in restricted number of healthy tissues. This sequence has
CC   anticancer activity. CAMEL tumour antigen and immunogenic peptides
CC   derived from it are useful for cancer immunotherapy. They have the
CC   potential to induce an immune response, by eliciting a CTL response. The
CC   DNA molecule is used to construct recombinant or fusion proteins
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:        11
Score:                  11.00         Matches:       11
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            6.11%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY70855 (1-11)

Qy         94 ATGCTGATGGCCCAGGAGGCCCTGGCATTCCTG 126
              |||||||||||||||||||||||||||||||||
Db          1 MetLeuMetAlaGlnGluAlaLeuAlaPheLeu 11
```

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RESULT 119
AAY78469
ID   AAY78469 standard; peptide; 11 AA.
XX
AC   AAY78469;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #1.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 12; Page 21; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134             Length:         11
Score:                  11.00           Matches:        11
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            6.11%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAY78469 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

```
RESULT 120
AAB02630
ID   AAB02630 standard; peptide; 11 AA.
XX
AC   AAB02630;
XX
DT   18-AUG-2000  (first entry)
XX
DE   Tumour associated peptide antigen from NY-ESO-1 #1.
XX
KW   MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;
KW   cancer; human; tumour; tumour associated gene product.
XX
OS   Homo sapiens.
XX
PN   WO200020581-A1.
XX
PD   13-APR-2000.
XX
PF   15-SEP-1999;   99WO-US021230.
XX
PR   05-OCT-1998;   98US-00166448.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI   Chaux P,  Stroobant V,  Boon-Falleur T,  Van Der Bruggen P;
PI   Schultz ES,  Van Snick J,  Lethe B,  Thielemans K,  Corthals J;
PI   Heirman C;
XX
DR   WPI; 2000-317713/27.
XX
PT   New MAGE-A3 class II binding peptides, useful to diagnose and treat
PT   tumors, are fragments of MAGE-A3 which bind to and are presented to T
PT   lymphocytes by human leukocyte antigen class II molecules.
XX
PS   Disclosure; Page 33; 119pp; English.
XX
CC   The present invention relates to MAGE-A3 (tumour associated gene product)
CC   human leukocyte antigen (HLA) class II-binding peptides (see AAB02566-
CC   B02595, and AAB02633-B02637). These peptides are presented to T cells in
CC   the context of HLA class II molecules. The peptides stimulate the
CC   activity and proliferation of CD4+ T lymphocytes. The invention also
CC   includes nucleotide sequences encoding MAGE-3A peptides (see AAA37928 and
CC   AAA37938-A37940). The peptides and nucleotide sequences can be used to
CC   create antibodies against the MAGE-A3 peptides, the antibodies, peptides
CC   and nucleotide sequences can be used to create a vaccine. The peptides
CC   are used to diagnose or treat a disorder characterized by expression of
CC   MAGE-3, particularly cancer. The methods can also be used in the
CC   diagnosis of disorders associated with MAGE-3 expression. Included in the
CC   invention are other human tumour antigens (see AAB02596-B02637), and PCR
CC   primers used in the course of the invention (see AAA37929-A37937 and
CC   AAA37941-A37942)
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134             Length:         11
Score:                  11.00           Matches:        11
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            6.11%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAB02630 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 121
AAB08702
```

```
ID   AAB08702 standard; peptide; 11 AA.
XX
AC   AAB08702;
XX
DT   02-JAN-2001  (first entry)
XX
DE   Antigenic peptide from tumour rejection antigen NY-ESO-1.
XX
KW   EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;
KW   CD4+ T lymphocyte; tumour associated gene; vaccine.
XX
OS   Homo sapiens.
XX
PN   WO200050589-A1.
XX
PD   31-AUG-2000.
XX
PF   18-FEB-2000; 2000WO-US004326.
XX
PR   22-FEB-1999;   99US-0121170P.
PR   08-OCT-1999;   99US-0158566P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Chiari R,  Coulie P,  Boon-Falleur T;
XX
DR   WPI; 2000-572089/53.
XX
PT   Novel tyrosine kinase receptor, EphA3 human leukocyte antigen (HLA) class
PT   II binding peptide and nucleic acid encoding the receptor, useful for
PT   diagnosing and treating conditions characterized by expression of EphA3
PT   gene.
XX
PS   Disclosure; Page 35; 107pp; English.
XX
CC   AAB08668-B08704 represent antigenic peptides characteristic of tumours.
CC   The peptides may be combined in vaccines with a human EphA3 HLA (human
CC   leukocyte antigen) class II-binding peptide. EphA3 antigens, when
CC   presented by an antigen presenting cell having a HLA class II molecule,
CC   effectively induce activation and proliferation of CD4+ T lymphocytes.
CC   EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used
CC   for selectively enriching a population of T lymphocytes. The peptides are
CC   also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA
CC   binding peptide expression. The peptides are also used to treat a
CC   disorder characterized by EphA3 expression. The EphA3 binding peptides
CC   are useful in producing vaccines and antibody
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:         11
Score:                  11.00         Matches:        11
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            6.11%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB08702 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 122
AAE02119
ID   AAE02119 standard; peptide; 11 AA.
XX
AC   AAE02119;
XX
DT   31-JUL-2001  (first entry)
XX
DE   NY-ESO-1 human leukocyte antigen-A2-binding peptide #1.
XX
KW   Human; cytostatic; immunogen; NY-ESO-1; human leukocyte antigen; HLA;
KW   CD8; cytotoxic T lymphocyte; cancer; carcinoma; melanoma; myeloma;
KW   brain tumour; sarcoma; vaccine; gene therapy.
XX
OS   Homo sapiens.
XX
PN   WO200129220-A2.
XX
PD   26-APR-2001.
XX
PF   19-OCT-2000; 2000WO-US028852.
XX
PR   19-OCT-1999;   99US-0160374P.
PR   01-FEB-2000; 2000US-0179570P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Heidecker L,  Van Den Eynde B,  Boon-Falleur T,  Brasseur F;
XX
DR   WPI; 2001-328498/34.
XX
PT   New antigenic peptides derived from MAGE-A12 polypeptides, useful for
PT   diagnosis and treatment of cancer, such as bladder, lung, breast, brain,
PT   prostate and renal carcinomas.
XX
PS   Disclosure; Page 21; 69pp; English.
XX
CC   The patent discloses antigenic peptides derived from MAGE-A12 protein and
CC   presented by human leukocyte antigens (HLAs). These antigenic peptides
CC   when presented by an antigen presenting cell having a HLA class I
CC   molecule, effectively induce the activation and proliferation of CD8+
CC   cytotoxic T lymphocytes (CTLs). MAGE-A12 is useful for treating a subject
CC   having a disorder characterised by expression of MAGE-A12. The protein
CC   microarray comprising MAGE-A12 is useful for diagnosing a disorder,
CC   especially cancer, by determining the binding of an antibody, T
CC   lymphocytes or a HLA molecule isolated from the subject suspected of
CC   having the disorder characterised by the expression of MAGE-A12. MAGE-A12
CC   is useful for treating cancers, including bladder carcinomas, melanomas,
CC   oesophageal, lung, head and neck, breast, colorectal carcinomas,
CC   myelomas, brain tumours, sarcomas, prostate and renal carcinomas and to
CC   produce antibodies. MAGE-A12 antibodies are useful for diagnosing
CC   disorders characterised by expression of MAGE-A12 immunogenic
CC   polypeptide. These MAGE-A12 peptides are used as vaccines. They are also
CC   used in gene therapy. The present sequence is an antigenic peptide
CC   derived from NY-ESO-1. This peptide which is characteristic of tumours is
CC   presented by HLA-A2 MHC (major histocompatibility complex) and is
CC   recognised by CTLs
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134           Length:         11
Score:                  11.00         Matches:        11
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            6.11%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAE02119 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 123
AAB69947
ID   AAB69947 standard; peptide; 11 AA.
XX
AC   AAB69947;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 CTL stimulating peptide #1.
```

XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 13; Page 24; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69947 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 124
AAG67165
ID AAG67165 standard; peptide; 11 AA.
XX
AC AAG67165;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 12; Page 24; 50pp; English.
XX
CC The present sequence represents a peptide which is derived from cancer
CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide
CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is
CC processed to at least one human leukocyte antigen (HLA) binding peptide,
CC which binds to Class I and Class II major histocompatibility complex
CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal
CC colon, kidney, liver or brain tissue. The presence or level of expression
CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis
CC tumours
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67165 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 125
AAU01536
ID AAU01536 standard; peptide; 11 AA.
XX
AC AAU01536;
XX
DT 18-JUL-2001 (first entry)
XX
DE Cytolytic T cell line stimulator peptide #1.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody; cytolytic T cell line.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.

```
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M;
XX
DR   WPI; 2001-266156/27.
XX
PT   Polypeptides binding to major histocompatibility complex class II human
PT   leukocyte antigen-determining region molecule having amino acid sequence
PT   found in tumor rejection antigen precursor used for stimulating
PT   proliferation of helper T cells.
XX
PS   Example 12; Page 17; 62pp; English.
XX
CC   The sequence represents a human NY-ESO-1 tumour rejection antigen
CC   precursor fragment which efficiently stimulates cytolytic T cell lines.
CC   NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major
CC   histocompatibility complex (MHC) Class II molecules such as human
CC   leukocyte antigen-determining region (HLA-DR) molecules and stimulate
CC   proliferation of helper T cells. The peptides can be administered to an
CC   HLA-DR positive subject in order to stimulate the helper T cells. An MHC
CC   Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell
CC   or present in free form is useful for this stimulation. The nucleic acid
CC   is useful for screening for a cancerous condition, which involves
CC   contacting a subject sample to a cell line transfected with the
CC   immunoreactive cell (helper T cell), where interaction is indicative of
CC   cancer. In addition, a sample from a patient (for example, a body fluid
CC   or tissue) can be monitored for the amount of the complex present in the
CC   bloodstream. This is useful for determining regression, progression or
CC   onset of a cancerous condition. The method involves contacting the sample
CC   with a radioactive labelled or enzyme labelled monoclonal antibody which
CC   specifically binds with the complex
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAU01536 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 126
AAB31327
ID   AAB31327 standard; peptide; 11 AA.
XX
AC   AAB31327;
XX
DT   20-APR-2001  (first entry)
XX
DE   Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW   MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW   MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS   Homo sapiens.
XX
PN   WO200078806-A1.
XX
PD   28-DEC-2000.
XX
PF   14-JUN-2000; 2000WO-US016287.
XX
PR   18-JUN-1999;   99US-00336091.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Van Snick J,  Lethe B,  Chaux P,  Boon-Falleur T,  Van Der Bruggen P;
XX
DR   WPI; 2001-102698/11.
XX
PT   Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT   are presented to the class II molecules, useful for inducing immune
PT   response and treating cancers characterized by expression of MAGE-A1.
XX
PS   Disclosure; Page 32; 78pp; English.
XX
CC   AAB31302-59 represent exemplary antigens which are characteristic of
CC   tumours. They can be used to enhance the immune response of vaccines
CC   comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC   antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC   binding protein stimulate the activity and proliferation of CD4+ T
CC   lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC   agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC   The protein is used for treating a disorder characterized by expression
CC   of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC   colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC   derived from the MAGE-A1 HLA binding protein are useful in the production
CC   of anti-tumour vaccines
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAB31327 (1-11)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThrGlnCys 11

RESULT 127
AAB31328
ID   AAB31328 standard; peptide; 11 AA.
XX
AC   AAB31328;
XX
DT   20-APR-2001  (first entry)
XX
DE   Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW   MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW   MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS   Homo sapiens.
XX
PN   WO200078806-A1.
XX
PD   28-DEC-2000.
XX
PF   14-JUN-2000; 2000WO-US016287.
XX
PR   18-JUN-1999;   99US-00336091.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Van Snick J,  Lethe B,  Chaux P,  Boon-Falleur T,  Van Der Bruggen P;
XX
DR   WPI; 2001-102698/11.
XX
PT   Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT   are presented to the class II molecules, useful for inducing immune
PT   response and treating cancers characterized by expression of MAGE-A1.
XX
PS   Disclosure; Page 32; 78pp; English.
XX
```

CC AAB31302-59 represent exemplary antigens which are characteristic of
CC tumours. They can be used to enhance the immune response of vaccines
CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC binding protein stimulate the activity and proliferation of CD4+ T
CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC The protein is used for treating a disorder characterized by expression
CC of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC derived from the MAGE-A1 HLA binding protein are useful in the production
CC of anti-tumour vaccines
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB31328 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 128
AAB85298
ID AAB85298 standard; peptide; 11 AA.
XX
AC AAB85298;
XX
DT 17-SEP-2001 (first entry)
XX
DE HLA-A2 binding NY-ESO-1 peptide #1.
XX
KW NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;
KW HLA-A2; T-cell sorter; tumor; immune tetramer.
XX
OS Homo sapiens.
XX
PN WO200136453-A2.
XX
PD 25-MAY-2001.
XX
PF 08-NOV-2000; 2000WO-US042010.
XX
PR 15-NOV-1999; 99US-00440621.
PR 25-FEB-2000; 2000US-00514036.
PR 29-SEP-2000; 2000US-00676005.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYOX-) UNIV OXFORD.
XX
PI Valmori D, Cerottini J, Romero P, Cerundolo V;
XX
DR WPI; 2001-451454/48.
XX
PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell
PT presents human leukocyte antigen-A2 molecule on its surface, binds to
PT human leukocyte antigen molecules and provokes lysis by cytolytic T
PT cells.
XX
PS Example 1; Page 4; 38pp; English.
XX
CC The invention provides NY-ESO-1 peptide derivatives which bind to human
CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells
CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLLMWITQX, where X is an
CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide
CC derivatives are useful for determining if a cell presents an HLA-A2
CC molecule on its surface, by contacting a sample containing the cell with
CC the peptide or its derivative, and determining binding between them,
CC where the binding is indicative of HLA-A2 on the surface of the cell. The
CC NY-ESO-1 peptides and analogues are useful therapeutically, for
CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1
CC in connection with the pathology, as well as diagnostically, i.e. to
CC determine if HLA-A2 positive cells are present, or if relevant CTLs are
CC present. They are also useful for determining the presence of CTLs in a
CC sample. The peptides are useful as T-cell sorters, when incorporated into
CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that
CC can bind to HLA-A2 molecule
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB85298 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 129
AAB82016
ID AAB82016 standard; peptide; 11 AA.
XX
AC AAB82016;
XX
DT 12-JUN-2001 (first entry)
XX
DE HLA-A2 binding peptide derived from NY-ESO-1.
XX
KW Multiple myeloma; tumour rejection antigen precursor; MAGE; BAGE; GAGE;
KW LAGE; NY-ESO-1; PRAME; DAGE; human; HLA.
XX
OS Homo sapiens.
XX
PN US6210886-B1.
XX
PD 03-APR-2001.
XX
PF 30-OCT-1998; 98US-00183931.
XX
PR 04-FEB-1998; 98US-00018422.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Van Baren N, Brasseur F, Boon-Falleur T;
XX
DR WPI; 2001-289628/30.
XX
PT Detecting multiple myeloma in a patient, comprises contacting a nucleic
PT acid containing sample taken from bone marrow or blood with a
PT hybridization probe specific for a tumor rejection antigen precursor.
XX
PS Example 3; Col 11; 16pp; English.
XX
CC The present invention relates to a method for detecting multiple myeloma.
CC The method comprises contacting a nucleic acid containing a sample taken
CC from a bone marrow or blood of a patient, with a hybridisation probe
CC specific for a tumour rejection antigen precursor. Tumour rejection
CC antigen precursors used in the present invention are the MAGE family,
CC BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGE).
CC Expression of the tumour rejection antigen precursor indicates possible
CC multiple myeloma in the patient. The method can also be used for
CC monitoring the disease progress and course of therapeutic regime. The
CC present sequence is a peptide derived from a tumour rejection antigen

```
CC   precursor, which was used in the method of the present invention
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134          Length:        11
Score:                  11.00        Matches:       11
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            6.11%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAB82016 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 130
AAE07752
ID   AAE07752 standard; peptide; 11 AA.
XX
AC   AAE07752;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #5 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134          Length:        11
Score:                  11.00        Matches:       11
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            6.11%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAE07752 (1-11)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeuLeu 11

RESULT 131
AAE07784
ID   AAE07784 standard; peptide; 11 AA.
XX
AC   AAE07784;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 peptide #18 to characterise epitope recognised by TE4-1.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 6; Fig 6A; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
```

```
CC   mediated immunity against cancer. The present sequence is human NY ESO-1
CC   peptide used in the characterisation of the NY ESO-1 epitope recognised
CC   by TE4-1
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAE07784 (1-11)

Qy         411 GGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
               |||||||||||||||||||||||||||||||||
Db           1 GlyValLeuLeuLysGluPheThrValSerGly 11

RESULT 132
AAE07725
ID   AAE07725 standard; peptide; 11 AA.
XX
AC   AAE07725;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human NY ESO-1 MHC class II restricted T cell epitope #11.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Claim 4; Page 16; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is MHC class II
CC   restricted T cell epitope of human NY ESO-1 protein
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:         11
Score:                    11.00           Matches:        11
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              6.11%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAE07725 (1-11)

Qy         411 GGGGTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
               |||||||||||||||||||||||||||||||||
Db           1 GlyValLeuLeuLysGluPheThrValSerGly 11

RESULT 133
AAE07777
ID   AAE07777 standard; peptide; 11 AA.
XX
AC   AAE07777;
XX
DT   06-NOV-2001  (first entry)
XX
DE   Human wildtype NY ESO-1 peptide, ESOp157-167.
XX
KW   Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW   class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW   NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW   tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW   immunotherapy.
XX
OS   Homo sapiens.
XX
PN   WO200155393-A2.
XX
PD   02-AUG-2001.
XX
PF   26-JAN-2001; 2001WO-US002765.
XX
PR   28-JAN-2000; 2000US-0179004P.
PR   29-SEP-2000; 2000US-0237107P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang R,  Rosenberg SA,  Zeng G;
XX
DR   WPI; 2001-496851/54.
XX
PT   New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT   useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT   protection from metastasis.
XX
PS   Example 14; Page 62; 134pp; English.
XX
CC   The invention relates to the identification and isolation of major
CC   histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC   epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC   from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC   antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC   restricted. The products of the gene are promising candidates for
CC   immunotherapeutic strategies for the prevention, treatment and diagnosis
CC   of patients with cancer. The cancer epitopes are useful as immunogen and
CC   vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC   lymphocytes resulting in protection of the recipient from development of
CC   cancer and protection from metastasis, or by inhibiting the growth of
CC   cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC   useful as diagnostic agent to detect the presence of cancer, to enhance
CC   the generation of antibody and/or CD8+ T cell responses against any given
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```
CC   target antigen and/or hapten and to induce tumour-specific humoral-
CC   mediated immunity against cancer. The present sequence is human wildtype
CC   NY ESO-1 peptide, ESOp157-167
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134             Length:         11
Score:                  11.00           Matches:        11
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            6.11%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAE07777 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 134
AAE06849
ID   AAE06849 standard; peptide; 11 AA.
XX
AC   AAE06849;
XX
DT   16-OCT-2001  (first entry)
XX
DE   Human NY-ESO-1 antigenic peptide #1.
XX
KW   MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;
KW   tumour cell; immunostimulant; antigen presentation; cancer; melanoma;
KW   CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;
KW   myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;
KW   gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;
KW   major histocompatibility complex.
XX
OS   Homo sapiens.
XX
PN   WO200153833-A1.
XX
PD   26-JUL-2001.
XX
PF   19-JAN-2001; 2001WO-US002008.
XX
PR   20-JAN-2000; 2000US-0177242P.
PR   25-OCT-2000; 2000US-0243212P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Luiten R,  Boon-Falleur T,  Van Der Bruggen P,  Stroobant V;
PI   Demotte N,  Schultz E;
XX
DR   WPI; 2001-488724/53.
XX
PT   Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44
PT   binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in
PT   diagnosis and treatment of a disorder characterized by expression of MAGE
PT   -A1 or -A3.
XX
PS   Disclosure; Page 28; 103pp; English.
XX
CC   The invention relates to functional variants and isolated mimetics of a
CC   MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or
CC   of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in
CC   the specification. MAGE genes encode tumour rejection antigens (TRAs)
CC   presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE
CC   antigenic peptide acts by binding to HLA molecules on tumour cells and
CC   stimulating recognition of these cells and thus signalling them to the
CC   immune system for destruction. The peptide when presented by HLA molecule
CC   induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.
CC   The MAGE antigenic peptide is used to treat and diagnose disorders
CC   characterised by expression of MAGE-A1 or -A3. Disorders include cancers
CC   e.g melanomas, oesophageal, lung, head and neck, breast, colorectal,
CC   prostate, renal, bladder, hepatocellular, papillary thyroid and gastric
CC   carcinomas, myelomas, brain tumours, sarcomas, seminomas, and ovarian
CC   tumours. The present sequence is human NY-ESO-1 tumour associated
CC   antigenic peptide presented by major histocompatibility complex (MHC) HLA
CC   -A2. The antigenic peptide is used in combination with peptides of the
CC   invention for inducing an immune response
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:              134             Length:         11
Score:                  11.00           Matches:        11
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            6.11%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAE06849 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 135
ABG66804
ID   ABG66804 standard; peptide; 11 AA.
XX
AC   ABG66804;
XX
DT   24-SEP-2002  (first entry)
XX
DE   Tumour antigen LAGE/CAMEL, HLA-A2 epitope.
XX
KW   Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;
KW   human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;
KW   gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;
KW   liver cancer; biliary tract cancer; pancreatic cancer; vaccine;
KW   prostatic cancer; testicular cancer; lung cancer; breast cancer;
KW   malignant melanoma; mesothelioma; brain tumour; ovarian cancer;
KW   uterine cancer; cervical cancer; head and neck cancer; bladder cancer;
KW   Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;
KW   acquired immunodeficiency syndrome; AIDS-related lymphoma.
XX
OS   Homo sapiens.
XX
PN   WO200236146-A2.
XX
PD   10-MAY-2002.
XX
PF   01-NOV-2001; 2001WO-GB004844.
XX
PR   02-NOV-2000; 2000GB-00026812.
XX
PA   (ISIS-) ISIS INNOVATION LTD.
XX
PI   Tafuro S,  Meier U,  Mcmichael AJ,  Bell JI,  Layton G,  Hunter M;
XX
DR   WPI; 2002-508108/54.
XX
PT   New polynucleotide capable of expressing an epitope-beta2m fusion protein
PT   useful for generating cytotoxic T lymphocyte responses against a tumor
PT   and in restoring antigen presentation in the tumor of a host.
XX
PS   Disclosure; Page 25; 46pp; English.
XX
CC   The invention relates to a new polynucleotide capable of expressing an
CC   epitope-beta_2m fusion protein useful for generating cytotoxic T
CC   lymphocyte (CTL) responses against a tumour or in restoring antigen
CC   presentation in the tumour of a host. Also included are a polynucleotide
CC   capable of expressing an epitope-beta_2m fusion protein in combination
CC   with a vaccination agent that stimulates a CTL response against the
CC   epitope of the fusion protein for simultaneous, separate or sequential
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CC   use in the treatment of cancer and a method of treating a tumour by
CC   administering a capable of expressing an epitope-beta_2m fusion protein,
CC   and optionally a vaccination agent that stimulates a CTL response against
CC   the epitope of the fusion protein. The polynucleotide is useful for
CC   generating CTL responses against tumours, for restoring antigen
CC   presentation in the tumour, and subsequently for treating cancers, such
CC   as gastrointestinal tumour, prostatic, testicular, lung or breast cancer,
CC   malignant melanoma, mesothelioma, brain tumour, ovarian cancer, uterine
CC   cancer including cervical cancer, cancer of the head and neck, bladder
CC   cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome)-
CC   related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and
CC   haematopoietic malignant tumours such as leukaemia and lymphoma. The
CC   epitope is an HLA (human leukocyte antigen) peptide derived from a viral
CC   or tumour antigen. The present sequence is a tumour HLA epitope used in
CC   the fusion proteins of the invention
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:          11
Score:                    11.00           Matches:         11
Percent Similarity:       100.00%         Conservative:    0
Best Local Similarity:    100.00%         Mismatches:      0
Query Match:              6.11%           Indels:          0
DB:                       1               Gaps:            0

US-10-023-182-1 (1-752) x ABG66804 (1-11)

Qy         94 ATGCTGATGGCCCAGGAGGCCCTGGCATTCCTG 126
              |||||||||||||||||||||||||||||||||
Db          1 MetLeuMetAlaGlnGluAlaLeuAlaPheLeu 11

RESULT 136
ABU64812
ID   ABU64812 standard; peptide; 11 AA.
XX
AC   ABU64812;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 CTL stimulatory peptide #1.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 12; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents a CTL
CC   stimulatory peptide derived from human NY-ESO-1
XX
SQ   Sequence 11 AA;

Alignment Scores:
Pred. No.:                134             Length:          11
Score:                    11.00           Matches:         11
Percent Similarity:       100.00%         Conservative:    0
Best Local Similarity:    100.00%         Mismatches:      0
Query Match:              6.11%           Indels:          0
DB:                       1               Gaps:            0

US-10-023-182-1 (1-752) x ABU64812 (1-11)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11

RESULT 137
ADA19552
ID   ADA19552 standard; peptide; 11 AA.
XX
AC   ADA19552;
XX
DT   20-NOV-2003  (first entry)
XX
DE   Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #1.
XX
KW   Lymphoid tissue-specific cell; haematopoietic progenitor cell;
KW   lymphoreticular stromal cell; transplantation; implantation;
KW   autoimmune disease; infectious disease; maintenance; expansion;
KW   differentiation; T cell tolerance; immune tolerance; T-cell reactivity;
KW   therapeutic; differentiated progeny; antigen; MHC;
KW   major histocompatibility complex; cancer; human.
XX
OS   Homo sapiens.
XX
PN   US6548299-B1.
XX
PD   15-APR-2003.
XX
PF   18-MAY-2000; 2000US-00574749.
XX
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PR 12-NOV-1999; 99WO-US026795.
XX
PA (PYKE/) PYKETT M J.
PA (ROSE/) ROSENZWEIG M.
PA (SCAD/) SCADDEN D T.
PA (POZN/) POZNANSKY M C.
XX
PI Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;
XX
DR WPI; 2003-605374/57.
XX
PT Producing lymphoid tissue-specific cell in vivo, useful in
PT transplantation, implantation, autoimmune and/or infectious diseases by
PT introducing hematopoietic progenitor and lymphoreticular stromal cells
PT into a porous solid matrix.
XX
PS Disclosure; SEQ ID NO 33; 34pp; English.
XX
CC The invention discloses a method for producing lymphoid tissue-specific
CC cell in vivo, comprising introducing haematopoietic progenitor cells and
CC lymphoreticular stromal cells into a porous, solid matrix having
CC interconnected pores of a pore size sufficient to permit the cells to
CC grow throughout the matrix, and co-culturing the haematopoietic
CC progenitor cells and lymphoreticular stromal cells. The methods are
CC useful in transplantation, implantation, autoimmune diseases and/or
CC infectious diseases. They are particularly useful for in vivo
CC maintenance, expansion and/or differentiation of haematopoietic
CC progenitor cells, for inducing T cell tolerance, for treating a subject
CC to enhance immune tolerance, for inducing T-cell reactivity, and for
CC identifying an agent suspected of affecting haematopoietic cell
CC development. The lymphoid tissue-specific cells are useful in laboratory
CC analysis and in therapeutics. The method provides rapid generation of a
CC large number of differentiated progeny. The sequence presented is a
CC cancer antigen which was used in the invention to expand haematopoietic
CC progenitor cells.
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADA19552 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 138
ADD35559
ID ADD35559 standard; peptide; 11 AA.
XX
AC ADD35559;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:9.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Example 8; SEQ ID NO 9; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 11 AA;

Alignment Scores:

Pred. No.:	134	Length:	11
Score:	11.00	Matches:	11
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	6.11%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35559 (1-11)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11
```

RESULT 139
AAU85119
ID AAU85119 standard; peptide; 30 AA.
XX
AC AAU85119;
XX
DT 08-MAY-2002 (first entry)
XX

```
DE   Human LAGE1 segment 2.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36939.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              211          Length:          30
Score:                  11.00        Matches:         11
Percent Similarity:     44.00%       Conservative:    0
Best Local Similarity:  44.00%       Mismatches:      14
Query Match:            6.18%        Indels:          0
DB:                     1            Gaps:            0

US-10-023-182-1 (1-752) x AAU85119 (1-30)

Qy        187 GGACCTCTGCCGCCCGTGGCACCCGCCTCTCCTGGGCCGCCAGCATTGCCCCCTGGGCCA 128
              ||||||      |||      |||      ||||||      |||      ||||||
Db          4 GlyProGlyGlyProGlyIleProAspGlyProGlyGlyAsnAlaGlyGlyProGlyGlu 23

Qy        127 TCAGGAATGCCAGGG 113
                  |||      |||
Db         24 AlaGlyAlaThrGly 28

RESULT 140
AAU85105
ID   AAU85105 standard; peptide; 30 AA.
XX
AC   AAU85105;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1a segment 4.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36925.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              211          Length:          30
Score:                  11.00        Matches:         11
Percent Similarity:     44.00%       Conservative:    0
Best Local Similarity:  44.00%       Mismatches:      14
Query Match:            6.18%        Indels:          0
```

```
DB:                    1             Gaps:          0

US-10-023-182-1 (1-752) x AAU85105 (1-30)

Qy        274 CCATTCAGCCCTGAAGCCGCGCCGCCATGCGGACCCCGCGGGGCGCCTCCTCCCGGCCCC 215
              |||           ||||||         ||||||   |||      |||   ||||||
Db          2 ProArgGlyAlaGlyAlaAlaArgAlaSerGlyProGlyGlyGlyAlaProArgGlyPro 21

Qy        214 GAGGCCCTTGCTGCC 200
                  ||||||
Db         22 HisGlyGlyAlaAla 26

RESULT 141
AAU85103
ID   AAU85103 standard; peptide; 30 AA.
XX
AC   AAU85103;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1a segment 2.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36923.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              211          Length:         30
Score:                  11.00        Matches:        11
Percent Similarity:     44.00%       Conservative:   0
Best Local Similarity:  44.00%       Mismatches:     14
Query Match:            6.18%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAU85103 (1-30)

Qy        187 GGACCTCTGCCGCCCGTGGCACCCGCCTCTCCTGGGCCGCCAGCATTGCCCCCTGGGCCA 128
              ||||||      |||      |||      ||||||      |||      ||||||
Db          4 GlyProGlyGlyProGlyIleProAspGlyProGlyGlyAsnAlaGlyGlyProGlyGlu 23

Qy        127 TCAGGAATGCCAGGG 113
                  |||   |||
Db         24 AlaGlyAlaThrGly 28

RESULT 142
AAY06059
ID   AAY06059 standard; peptide; 10 AA.
XX
AC   AAY06059;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-77.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO10-77 corresponds to amino acid residues 77-86 of human NY ESO
CC   -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. It was examined
CC   for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC   granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC   AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC   are useful as cancer vaccines. A claimed method of preventing or
CC   inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
```

XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06059 (1-10)

```
Qy        282 AGATGCGGGGCCAGGGGGCCGGAGAGCCGC 311
              ||||||||||||||||||||||||||||||
Db          1 ArgCysGlyAlaArgGlyProGluSerArg 10
```

RESULT 143
AAY06062
ID AAY06062 standard; peptide; 10 AA.
XX
AC AAY06062;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-44.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO10-44 corresponds to amino acid residues 44-52 of human NY ESO
CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. It was examined
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC are useful as cancer vaccines. A claimed method of preventing or
CC inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06062 (1-10)

```
Qy        180 AGAGGTCCCCGGGGCGCAGGGGCAGCAAGG 209
              ||||||||||||||||||||||||||||||
Db          1 ArgGlyProArgGlyAlaGlyAlaAlaArg 10
```

RESULT 144
AAY05982
ID AAY05982 standard; peptide; 10 AA.
XX
AC AAY05982;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
DR N-PSDB; AAX58601.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Claim 26; Page 65; 88pp; English.
XX
CC The present sequence represents a cancer peptide that is based on amino
CC acid residues 19-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see AAY05966),
CC a new and potent tumour antigen capable of eliciting an antigen specific
CC immune response by T cells. Cancer peptides derived from CAG-3 ORF2, CAG-
CC 3 ORF1 (see AAY05965), portions of them and their variants (see AAY05967-
CC 87), are useful as cancer vaccines that protect against cancer. The
CC invention provides: vectors and host cells (also useful as vaccines); a
CC method of diagnosis of cancer or precancer; a transgenic animal;
CC antisense oligonucleotides that inhibit expression of the cancer peptide
CC or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
CC useful in diagnostic and detection assays; and methods for preventing or
CC inhibiting cancer by administering a cancer peptide, with or without an
CC HLA molecule. The cancer peptides form part of, or are derived from,
CC cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by
CC inducing cancer-specific T cells in vitro for subsequent return to a
CC patient
XX
SQ Sequence 10 AA;

```
Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05982 (1-10)

Qy        145 CTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              ||||||||||||||||||||||||||||||
Db          1 LeuAlaAlaGlnGluArgArgValProArg 10

RESULT 145
AAY05996
ID   AAY05996 standard; peptide; 10 AA.
XX
AC   AAY05996;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 9) corresponds to amino acid residues 163-172 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05996 (1-10)

Qy        540 ACGCAGTGCTTTCTGCCCGTGTTTTTGGCT 569
              ||||||||||||||||||||||||||||||
Db          1 ThrGlnCysPheLeuProValPheLeuAla 10

RESULT 146
AAY06014
ID   AAY06014 standard; peptide; 10 AA.
XX
AC   AAY06014;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 27) corresponds to amino acid residues 22-31 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0
```

```
US-10-023-182-1 (1-752) x AAY06014 (1-10)

Qy        117 GGCATTCCTGATGGCCCAGGGGGCAATGCT 146
              ||||||||||||||||||||||||||||||
Db          1 GlyIleProAspGlyProGlyGlyAsnAla 10

RESULT 147
AAY06011
ID   AAY06011 standard; peptide; 10 AA.
XX
AC   AAY06011;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 24) corresponds to amino acid residues 143-152 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06011 (1-10)

Qy        480 CGCCAACTGCAGCTCTCCATCAGCTCCTGT 509
              ||||||||||||||||||||||||||||||
Db          1 ArgGlnLeuGlnLeuSerIleSerSerCys 10

RESULT 148
AAY06058
ID   AAY06058 standard; peptide; 10 AA.
XX
AC   AAY06058;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-170.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO10-98 corresponds to amino acid residues 98-107 of human NY
CC   ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC   of eliciting an antigen specific immune response by T cells. It was
CC   examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC   release of granulocyte macrophage colony stimulating factor. Cancer
CC   peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC   their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06058 (1-10)

Qy        345 ACACCCATGGAAGCAGAGCTGGCCCGCAGG 374
              ||||||||||||||||||||||||||||||
Db          1 ThrProMetGluAlaGluLeuAlaArgArg 10

RESULT 149
AAY05999
ID   AAY05999 standard; peptide; 10 AA.
```

```
XX
AC   AAY05999;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 12) corresponds to amino acid residues 152-161 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY05999 (1-10)

Qy        507 TGTCTCCAGCAGCTTTCCCTGTTGATGTGG 536
              ||||||||||||||||||||||||||||||
Db          1 CysLeuGlnGlnLeuSerLeuLeuMetTrp 10

RESULT 150
AAY06010
ID   AAY06010 standard; peptide; 10 AA.
XX
AC   AAY06010;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 23) corresponds to amino acid residues 86-95 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06010 (1-10)

Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATGCCT 338
              ||||||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMetPro 10

RESULT 151
AAY06012
ID   AAY06012 standard; peptide; 10 AA.
XX
AC   AAY06012;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
```

KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 25) corresponds to amino acid residues 71-80 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06012 (1-10)

```
Qy        264 GGGCTGAATGGATGCTGCAGATGCGGGGCC 293
              ||||||||||||||||||||||||||||||
Db          1 GlyLeuAsnGlyCysCysArgCysGlyAla 10
```

RESULT 152
AAY05991
ID AAY05991 standard; peptide; 10 AA.
XX
AC AAY05991;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 4) corresponds to amino acid residues 170-179 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05991 (1-10)

```
Qy        561 TTTTTGGCTCAGCCTCCCTCAGGGCAGAGG 590
              ||||||||||||||||||||||||||||||
Db          1 PheLeuAlaGlnProProSerGlyGlnArg 10
```

RESULT 153
AAY06006
ID AAY06006 standard; peptide; 10 AA.
XX
AC AAY06006;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.

```
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 19) corresponds to amino acid residues 157-166 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06006 (1-10)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTT 551
              ||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPhe 10

RESULT 154
AAY06013
ID   AAY06013 standard; peptide; 10 AA.
XX
AC   AAY06013;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 26) corresponds to amino acid residues 91-100 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06013 (1-10)

Qy        324 TACCTCGCCATGCCTTTCGCGACACCCATG 353
              ||||||||||||||||||||||||||||||
Db          1 TyrLeuAlaMetProPheAlaThrProMet 10

RESULT 155
AAY05990
ID   AAY05990 standard; peptide; 10 AA.
XX
AC   AAY05990;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
```

```
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 3) corresponds to amino acid residues 97-106 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05990 (1-10)

Qy        342 GCGACACCCATGGAAGCAGAGCTGGCCCGC 371
              ||||||||||||||||||||||||||||||
Db          1 AlaThrProMetGluAlaGluLeuAlaArg 10

RESULT 156
AAY06016
ID   AAY06016 standard; peptide; 10 AA.
XX
AC   AAY06016;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 29) corresponds to amino acid residues 144-153 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06016 (1-10)

Qy        483 CAACTGCAGCTCTCCATCAGCTCCTGTCTC 512
              ||||||||||||||||||||||||||||||
Db          1 GlnLeuGlnLeuSerIleSerSerCysLeu 10

RESULT 157
AAY05994
ID   AAY05994 standard; peptide; 10 AA.
XX
AC   AAY05994;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
```

XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 7) corresponds to amino acid residues 68-77 of CAG-1 ORF1
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05994 (1-10)

```
Qy        255 GCGGCTTCAGGGCTGAATGGATGCTGCAGA 284
              ||||||||||||||||||||||||||||||
Db          1 AlaAlaSerGlyLeuAsnGlyCysCysArg 10
```

RESULT 158
AAY05997
ID AAY05997 standard; peptide; 10 AA.
XX
AC AAY05997;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 10) corresponds to amino acid residues 153-162 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05997 (1-10)

```
Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGGATC 539
              ||||||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrpIle 10
```

RESULT 159
AAY06003
ID AAY06003 standard; peptide; 10 AA.
XX
AC AAY06003;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 16) corresponds to amino acid residues 158-167 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of

```
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06003 (1-10)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPheLeu 10

RESULT 160
AAY06015
ID   AAY06015 standard; peptide; 10 AA.
XX
AC   AAY06015;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 28) corresponds to amino acid residues 53-62 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06015 (1-10)

Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArg 10

RESULT 161
AAY06063
ID   AAY06063 standard; peptide; 10 AA.
XX
AC   AAY06063;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-72.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO10-72 corresponds to amino acid residues 72-81 of human NY ESO
CC   -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. It was examined
CC   for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC   granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC   AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC   are useful as cancer vaccines. A claimed method of preventing or
CC   inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
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XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06063 (1-10)

Qy        267 CTGAATGGATGCTGCAGATGCGGGGCCAGG 296
              ||||||||||||||||||||||||||||||
Db          1 LeuAsnGlyCysCysArgCysGlyAlaArg 10

RESULT 162
AAY05980
ID   AAY05980 standard; peptide; 10 AA.
XX
AC   AAY05980;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ESO10-127.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 17; Page 64; 88pp; English.
XX
CC   This sequence represents cancer peptide ESO10-127 that corresponds to
CC   amino acid residues 127-136 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see
CC   AAY05965), a new and potent tumour antigen capable of eliciting an
CC   antigen specific immune response by T cells. Cancer peptides derived from
CC   CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their
CC   variants (see AAY05967-87), are useful as cancer vaccines that protect
CC   against cancer. The invention provides: vectors and host cells (also
CC   useful as vaccines); a method of diagnosis of cancer or precancer; a
CC   transgenic animal; antisense oligonucleotides that inhibit expression of
CC   the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC   cancer peptide, useful in diagnostic and detection assays; and methods
CC   for preventing or inhibiting cancer by administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC   treated by inducing cancer-specific T cells in vitro for subsequent
CC   return to a patient
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05980 (1-10)

Qy        432 ACTGTGTCCGGCAACATACTGACTATCCGA 461
              ||||||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIleArg 10

RESULT 163
AAY05969
ID   AAY05969 standard; peptide; 10 AA.
XX
AC   AAY05969;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
DR   N-PSDB; AAX58600.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 11; Page 64; 88pp; English.
XX
CC   The present sequence represents a cancer peptide that is based on amino
CC   acid residues 55-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965),
CC   a new and potent tumour antigen capable of eliciting an antigen specific
CC   immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-
CC   3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-
CC   87), are useful as cancer vaccines that protect against cancer. The
CC   invention provides: vectors and host cells (also useful as vaccines); a
CC   method of diagnosis of cancer or precancer; a transgenic animal;
CC   antisense oligonucleotides that inhibit expression of the cancer peptide
CC   or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
CC   useful in diagnostic and detection assays; and methods for preventing or
CC   inhibiting cancer by administering a cancer peptide, with or without an
CC   HLA molecule. The cancer peptides form part of, or are derived from,
CC   cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
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CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by
CC   inducing cancer-specific T cells in vitro for subsequent return to a
CC   patient
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153             Length:         10
Score:                  10.00           Matches:        10
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.56%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAY05969 (1-10)

Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArg 10

RESULT 164
AAY05993
ID   AAY05993 standard; peptide; 10 AA.
XX
AC   AAY05993;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 6) corresponds to amino acid residues 77-86 of CAG-1 ORF1
CC   (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153             Length:         10
Score:                  10.00           Matches:        10
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.56%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAY05993 (1-10)

Qy        282 AGATGCGGGGCCAGGGGGCCGGAGAGCCGC 311
              ||||||||||||||||||||||||||||||
Db          1 ArgCysGlyAlaArgGlyProGluSerArg 10

RESULT 165
AAY06000
ID   AAY06000 standard; peptide; 10 AA.
XX
AC   AAY06000;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 13) corresponds to amino acid residues 131-140 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
```

```
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06000 (1-10)

Qy        444 AACATACTGACTATCCGACTGACTGCTGCA 473
              ||||||||||||||||||||||||||||||
Db          1 AsnIleLeuThrIleArgLeuThrAlaAla 10

RESULT 166
AAY06005
ID   AAY06005 standard; peptide; 10 AA.
XX
AC   AAY06005;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 18) corresponds to amino acid residues 161-170 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06005 (1-10)

Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTGTTT 563
              ||||||||||||||||||||||||||||||
Db          1 TrpIleThrGlnCysPheLeuProValPhe 10

RESULT 167
AAY06008
ID   AAY06008 standard; peptide; 10 AA.
XX
AC   AAY06008;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 21) corresponds to amino acid residues 72-81 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAY06008 (1-10)
```

```
Qy        267 CTGAATGGATGCTGCAGATGCGGGGCCAGG 296
              ||||||||||||||||||||||||||||||
Db          1 LeuAsnGlyCysCysArgCysGlyAlaArg 10

RESULT 168
AAY06055
ID   AAY06055 standard; peptide; 10 AA.
XX
AC   AAY06055;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-34.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO10-34 corresponds to amino acid residues 134-143 of human NY
CC   ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC   of eliciting an antigen specific immune response by T cells. It was
CC   examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC   release of granulocyte macrophage colony stimulating factor. Cancer
CC   peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC   their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06055 (1-10)

Qy        453 ACTATCCGACTGACTGCTGCAGACCACCGC 482
              ||||||||||||||||||||||||||||||
Db          1 ThrIleArgLeuThrAlaAlaAspHisArg 10

RESULT 169
AAY06069
ID   AAY06069 standard; peptide; 10 AA.
XX
AC   AAY06069;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 11; Page 50; 88pp; English.
XX
CC   This peptide corresponds to amino acid residues 54-63 of human NY ESO-
CC   1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC   capable of eliciting an antigen specific immune response by T cells.
CC   Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC   and their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06069 (1-10)

Qy        213 TCGGGGCCGGGAGGAGGCGCCCCGCGGGGT 242
              ||||||||||||||||||||||||||||||
Db          1 SerGlyProGlyGlyGlyAlaProArgGly 10

RESULT 170
AAY05992
ID   AAY05992 standard; peptide; 10 AA.
XX
AC   AAY05992;
XX
DT   16-AUG-1999  (first entry)
```

```
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 5) corresponds to amino acid residues 98-107 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05992 (1-10)

Qy        345 ACACCCATGGAAGCAGAGCTGGCCCGCAGG 374
              ||||||||||||||||||||||||||||||
Db          1 ThrProMetGluAlaGluLeuAlaArgArg 10

RESULT 171
AAY05998
ID   AAY05998 standard; peptide; 10 AA.
XX
AC   AAY05998;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 11) corresponds to amino acid residues 115-124 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05998 (1-10)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAG 425
              ||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLys 10

RESULT 172
AAY06009
ID   AAY06009 standard; peptide; 10 AA.
XX
AC   AAY06009;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
```

KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 22) corresponds to amino acid residues 154-163 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06009 (1-10)

```
Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIleThr 10
```

RESULT 173
AAY05989
ID AAY05989 standard; peptide; 10 AA.
XX
AC AAY05989;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 2) corresponds to amino acid residues 134-143 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05989 (1-10)

```
Qy        453 ACTATCCGACTGACTGCTGCAGACCACCGC 482
              ||||||||||||||||||||||||||||||
Db          1 ThrIleArgLeuThrAlaAlaAspHisArg 10
```

RESULT 174
AAY06004
ID AAY06004 standard; peptide; 10 AA.
XX
AC AAY06004;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.

XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 17) corresponds to amino acid residues 87-96 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06004 (1-10)

```
Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10
```

RESULT 175
AAY06017
ID AAY06017 standard; peptide; 10 AA.
XX
AC AAY06017;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 42; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 30) corresponds to amino acid residues 133-142 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06017 (1-10)

```
Qy        450 CTGACTATCCGACTGACTGCTGCAGACCAC 479
              ||||||||||||||||||||||||||||||
Db          1 LeuThrIleArgLeuThrAlaAlaAspHis 10
```

RESULT 176
AAY05988
ID AAY05988 standard; peptide; 10 AA.
XX
AC AAY05988;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;

```
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 1) corresponds to amino acid residues 127-136 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153          Length:         10
Score:                  10.00        Matches:        10
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            5.56%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAY05988 (1-10)

Qy        432 ACTGTGTCCGGCAACATACTGACTATCCGA 461
              ||||||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIleArg 10

RESULT 177
AAY06001
ID   AAY06001 standard; peptide; 10 AA.
XX
AC   AAY06001;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 14) corresponds to amino acid residues 126-135 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153          Length:         10
Score:                  10.00        Matches:        10
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            5.56%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAY06001 (1-10)

Qy        429 TTCACTGTGTCCGGCAACATACTGACTATC 458
              ||||||||||||||||||||||||||||||
Db          1 PheThrValSerGlyAsnIleLeuThrIle 10

RESULT 178
AAY06007
ID   AAY06007 standard; peptide; 10 AA.
XX
AC   AAY06007;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
```

CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 20) corresponds to amino acid residues 93-102 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06007 (1-10)

```
Qy        330 GCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||
Db          1 AlaMetProPheAlaThrProMetGluAla 10
```

RESULT 179
AAY06057
ID AAY06057 standard; peptide; 10 AA.
XX
AC AAY06057;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-170.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO10-170 corresponds to amino acid residues 170-179 of human NY
CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC of eliciting an antigen specific immune response by T cells. It was
CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC release of granulocyte macrophage colony stimulating factor. Cancer
CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC their variants, are useful as cancer vaccines. A claimed method of
CC preventing or inhibiting cancer involves administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06057 (1-10)

```
Qy        561 TTTTTGGCTCAGCCTCCCTCAGGGCAGAGG 590
              ||||||||||||||||||||||||||||||
Db          1 PheLeuAlaGlnProProSerGlyGlnArg 10
```

RESULT 180
AAY06060
ID AAY06060 standard; peptide; 10 AA.
XX
AC AAY06060;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-68.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO10-68 corresponds to amino acid residues 68-77 of human NY ESO
CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. It was examined
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC are useful as cancer vaccines. A claimed method of preventing or
CC inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,

```
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06060 (1-10)

Qy        255 GCGGCTTCAGGGCTGAATGGATGCTGCAGA 284
              ||||||||||||||||||||||||||||||
Db          1 AlaAlaSerGlyLeuAsnGlyCysCysArg 10

RESULT 181
AAY06002
ID   AAY06002 standard; peptide; 10 AA.
XX
AC   AAY06002;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 42; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC   peptide (ranked 15) corresponds to amino acid residues 43-52 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06002 (1-10)

Qy        180 AGAGGTCCCCGGGGCGCAGGGGCAGCAAGG 209
              ||||||||||||||||||||||||||||||
Db          1 ArgGlyProArgGlyAlaGlyAlaAlaArg 10

RESULT 182
AAY06056
ID   AAY06056 standard; peptide; 10 AA.
XX
AC   AAY06056;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-97.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO10-97 corresponds to amino acid residues 97-106 of human NY
CC   ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC   of eliciting an antigen specific immune response by T cells. It was
CC   examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC   release of granulocyte macrophage colony stimulating factor. Cancer
CC   peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC   their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
```

```
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.56%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAY06056 (1-10)

Qy        342 GCGACACCCATGGAAGCAGAGCTGGCCCGC 371
              ||||||||||||||||||||||||||||||
Db          1 AlaThrProMetGluAlaGluLeuAlaArg 10

RESULT 183
AAY52434
ID   AAY52434 standard; peptide; 10 AA.
XX
AC   AAY52434;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #7.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class I;
KW   T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9953938-A1.
XX
PD   28-OCT-1999.
XX
PF   24-MAR-1999;   99WO-US006875.
XX
PR   17-APR-1998;   98US-00062422.
PR   02-OCT-1998;   98US-00165546.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
PI   Gure A,  Ritter G;
XX
DR   WPI; 2000-038483/03.
XX
PT   Novel peptides which bind to MHC class I and MHC class II molecules,
PT   useful for therapeutic and diagnostic purposes.
XX
PS   Claim 55; Page 20; 49pp; English.
XX
CC   Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human
CC   tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIT
CC   (AAY52441). These sequences can bind to MHC (major histocompatibility
CC   Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic
CC   T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus
CC   squamous cell cancer cDNA library. Tissue localisation studies revealed
CC   it to be expressed at high levels in normal ovary and testis but not in
CC   normal colon, kidney, liver, brain, oesophagus and skin. It was expressed
CC   in certain tumours and tumour cell lines with some degree of frequency -
CC   these included melanoma specimens and cell lines, and breast and bladder
CC   cancer specimens, with expression in other tumour types being sporadic.
CC   These NY-ESO-1-derived peptides may be used in methods and compositions
CC   used for the treatment, diagnosis and prevention of cancers (such as
CC   melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian
CC   cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the
CC   proliferation of T cells
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153            Length:        10
Score:                  10.00          Matches:       10
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.56%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAY52434 (1-10)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPheLeu 10

RESULT 184
AAY70856
ID   AAY70856 standard; peptide; 10 AA.
XX
AC   AAY70856;
XX
DT   31-JUL-2000  (first entry)
XX
DE   CTL epitope-2 of human CAMEL protein.
XX
KW   CAMEL; CTL-recognised Antigen on MELanoma; cytotoxic T lymphocyte; CTL;
KW   tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;
KW   cancer; immunotherapy; immunogenic peptide; immune response.
XX
OS   Homo sapiens.
XX
PN   WO200023584-A1.
XX
PD   27-APR-2000.
XX
PF   15-OCT-1999;   99WO-EP007832.
XX
PR   16-OCT-1998;   98EP-00119583.
XX
PA   (BOEH ) BOEHRINGER INGELHEIM INT GMBH.
PA   (UYHO-) UNIV HOSPITAL LEIDEN.
XX
PI   Schrier PI,  Aarnoudse CA,  Heider K,  Klade C;
XX
DR   WPI; 2000-339685/29.
XX
PT   Tumor-associated antigen useful for cancer immunotherapy is encoded by
PT   the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
XX
PS   Claim 5; Page 34; 73pp; English.
XX
CC   The present sequence is an immunogenic peptide of human tumour-associated
CC   antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised Antigen on
CC   MELanoma). This peptide is a CTL epitope, that has the ability to elicit
CC   a CTL response. It corresponds to residues 2-11 of the CAMEL protein.
CC   CAMEL protein is encoded by the LAGE-1 gene, a tumour-specific antigen.
CC   It is different from the LAGE-1 protein, since it is translated from a
CC   different open reading frame (ORF-1). It shows strong homology with NY-
CC   ESO-1, a melanoma specific tumour antigen. The tumour-associated antigen
CC   displayed on melanoma cells is recognised by cytotoxic T lymphocytes.
CC   CAMEL is expressed in tumour cell lines, tumour tissues (e.g. breast and
CC   lung) and in restricted number of healthy tissues. This sequence has
CC   anticancer activity. CAMEL tumour antigen and immunogenic peptides
CC   derived from it are useful for cancer immunotherapy. They have the
CC   potential to induce an immune response, by eliciting a CTL response. The
CC   DNA molecule is used to construct recombinant or fusion proteins
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153            Length:        10
Score:                  10.00          Matches:       10
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.56%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAY70856 (1-10)
```

```
Qy          97 CTGATGGCCCAGGAGGCCCTGGCATTCCTG 126
               ||||||||||||||||||||||||||||||
Db           1 LeuMetAlaGlnGluAlaLeuAlaPheLeu 10
```

RESULT 185
AAY70858
ID AAY70858 standard; peptide; 10 AA.
XX
AC AAY70858;
XX
DT 31-JUL-2000 (first entry)
XX
DE CAMEL16 immunogenic peptide of human CAMEL protein.
XX
KW CAMEL; CTL-recognised Antigen on MELanoma; cytotoxic T lymphocyte; CTL;
KW tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;
KW cancer; immunotherapy; immunogenic peptide; immune response.
XX
OS Homo sapiens.
XX
PN WO200023584-A1.
XX
PD 27-APR-2000.
XX
PF 15-OCT-1999; 99WO-EP007832.
XX
PR 16-OCT-1998; 98EP-00119583.
XX
PA (BOEH) BOEHRINGER INGELHEIM INT GMBH.
PA (UYHO-) UNIV HOSPITAL LEIDEN.
XX
PI Schrier PI, Aarnoudse CA, Heider K, Klade C;
XX
DR WPI; 2000-339685/29.
XX
PT Tumor-associated antigen useful for cancer immunotherapy is encoded by
PT the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
XX
PS Claim 7; Page 34; 73pp; English.
XX
CC The present sequence is an immunogenic peptide CAMEL 16, of the human
CC tumour-associated antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised
CC Antigen on MELanoma). This peptide has the potential to bind to HLA-A2
CC and corresponds to residues 16-25 of the CAMEL protein. The CAMEL protein
CC is encoded by the LAGE-1 gene, a tumour-specific antigen. It is different
CC from the LAGE-1 protein, since it is translated from a different open
CC reading frame (ORF-1). It shows strong homology with NY-ESO-1, a melanoma
CC specific tumour antigen. The tumour-associated antigen displayed on
CC melanoma cells is recognised by cytotoxic T lymphocytes. CAMEL is
CC expressed in tumour cell lines, tumour tissues (e.g. breast and lung) and
CC in restricted number of healthy tissues. This sequence has anticancer
CC activity. CAMEL tumour antigen and immunogenic peptides derived from it
CC are useful for cancer immunotherapy. They have the potential to induce an
CC immune response, by eliciting a CTL response. The DNA molecule is used to
CC construct recombinant or fusion proteins
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY70858 (1-10)

```
Qy         139 GCAATGCTGGCGGCCCAGGAGAGGCGGGTG 168
               ||||||||||||||||||||||||||||||
Db           1 AlaMetLeuAlaAlaGlnGluArgArgVal 10
```

RESULT 186
AAY79761
ID AAY79761 standard; peptide; 10 AA.
XX
AC AAY79761;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #17.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 27; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79761 (1-10)

```
Qy         363 CTGGCCCGCAGGAGCCTGGCCCAGGATGCC 392
               ||||||||||||||||||||||||||||||
Db           1 LeuAlaArgArgSerLeuAlaGlnAspAla 10
```

RESULT 187
AAY79762
ID AAY79762 standard; peptide; 10 AA.
XX
AC AAY79762;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #18.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 27; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79762 (1-10)

Qy 537 ATCACGCAGTGCTTTCTGCCCGTGTTTTTG 566
||||||||||||||||||||||||||||||

Db 1 IleThrGlnCysPheLeuProValPheLeu 10

RESULT 188
AAY79759
ID AAY79759 standard; peptide; 10 AA.
XX
AC AAY79759;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #15.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 26; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79759 (1-10)

Qy 168 GCCACGGGCGGCAGAGGTCCCCGGGGCGCA 197

```
                    ||||||||||||||||||||||||||||||
Db          1 AlaThrGlyGlyArgGlyProArgGlyAla 10

RESULT 189
AAY79760
ID   AAY79760 standard; peptide; 10 AA.
XX
AC   AAY79760;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #16.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 27; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY79760 (1-10)

Qy         228 GGCGCCCCGCGGGGTCCGCATGGCGGCGCG 257
               ||||||||||||||||||||||||||||||
Db           1 GlyAlaProArgGlyProHisGlyGlyAla 10

RESULT 190
AAB69927
ID   AAB69927 standard; peptide; 10 AA.
XX
AC   AAB69927;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #27.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69927 (1-10)

Qy         396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAG 425
               ||||||||||||||||||||||||||||||
Db           1 ProLeuProValProGlyValLeuLeuLys 10

RESULT 191
AAB69929
```

```
ID   AAB69929 standard; peptide; 10 AA.
XX
AC   AAB69929;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #29.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69929 (1-10)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10

RESULT 192
AAB69933
ID   AAB69933 standard; peptide; 10 AA.
XX
AC   AAB69933;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #33.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69933 (1-10)

Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGGGCC 212
              ||||||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArgAla 10

RESULT 193
AAB69936
ID   AAB69936 standard; peptide; 10 AA.
XX
AC   AAB69936;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #36.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
```

OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69936 (1-10)

```
Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIleThr 10
```

RESULT 194
AAB69935
ID AAB69935 standard; peptide; 10 AA.
XX
AC AAB69935;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #35.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69935 (1-10)

```
Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10
```

RESULT 195
AAB69932
ID AAB69932 standard; peptide; 10 AA.
XX
AC AAB69932;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #32.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.

```
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAB69932 (1-10)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCGGCT 260
              ||||||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAlaAla 10

RESULT 196
AAB69937
ID   AAB69937 standard; peptide; 10 AA.
XX
AC   AAB69937;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #37.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAB69937 (1-10)

Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGGATC 539
              ||||||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrpIle 10

RESULT 197
AAB69925
ID   AAB69925 standard; peptide; 10 AA.
XX
AC   AAB69925;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #25.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
```

XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69925 (1-10)

```
Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10
```

RESULT 198
AAB69926
ID AAB69926 standard; peptide; 10 AA.
XX
AC AAB69926;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #26.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69926 (1-10)

```
Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              ||||||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPheTyr 10
```

RESULT 199
AAB69934
ID AAB69934 standard; peptide; 10 AA.
XX
AC AAB69934;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #34.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma

```
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69934 (1-10)

Qy        465 ACTGCTGCAGACCACCGCCAACTGCAGCTC 494
              ||||||||||||||||||||||||||||||
Db          1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10

RESULT 200
AAB69928
ID   AAB69928 standard; peptide; 10 AA.
XX
AC   AAB69928;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #28.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69928 (1-10)

Qy        372 AGGAGCCTGGCCCAGGATGCCCCACCGCTT 401
              ||||||||||||||||||||||||||||||
Db          1 ArgSerLeuAlaGlnAspAlaProProLeu 10

RESULT 201
AAB69930
ID   AAB69930 standard; peptide; 10 AA.
XX
AC   AAB69930;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #30.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69930 (1-10)
```

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTGCTT 317
              ||||||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeuLeu 10

RESULT 202
AAG67195
ID   AAG67195 standard; peptide; 10 AA.
XX
AC   AAG67195;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67195 (1-10)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAG 425
              ||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLys 10

RESULT 203
AAG67203
ID   AAG67203 standard; peptide; 10 AA.
XX
AC   AAG67203;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67203 (1-10)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10

RESULT 204
AAG67204
ID   AAG67204 standard; peptide; 10 AA.
XX
AC   AAG67204;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
```

```
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAG67204 (1-10)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIleThr 10

RESULT 205
AAG67196
ID   AAG67196 standard; peptide; 10 AA.
XX
AC   AAG67196;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAG67196 (1-10)

Qy        372 AGGAGCCTGGCCCAGGATGCCCCACCGCTT 401
              ||||||||||||||||||||||||||||||
Db          1 ArgSerLeuAlaGlnAspAlaProProLeu 10

RESULT 206
AAG67205
ID   AAG67205 standard; peptide; 10 AA.
XX
AC   AAG67205;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
```

```
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG67205 (1-10)

Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGGATC 539
              ||||||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrpIle 10
```

```
RESULT 207
AAG67201
ID   AAG67201 standard; peptide; 10 AA.
XX
AC   AAG67201;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG67201 (1-10)

Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGGGCC 212
              ||||||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArgAla 10
```

```
RESULT 208
AAG67197
ID   AAG67197 standard; peptide; 10 AA.
XX
AC   AAG67197;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG67197 (1-10)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10
```

```
RESULT 209
AAG67200
ID   AAG67200 standard; peptide; 10 AA.
XX
AC   AAG67200;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
```

```
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG67200 (1-10)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCGGCT 260
              ||||||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAlaAla 10

RESULT 210
AAG67194
ID   AAG67194 standard; peptide; 10 AA.
XX
AC   AAG67194;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG67194 (1-10)

Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              ||||||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPheTyr 10

RESULT 211
AAG67202
ID   AAG67202 standard; peptide; 10 AA.
XX
AC   AAG67202;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
```

```
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67202 (1-10)

Qy        465 ACTGCTGCAGACCACCGCCAACTGCAGCTC 494
              ||||||||||||||||||||||||||||||
Db          1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10

RESULT 212
AAG67193
ID   AAG67193 standard; peptide; 10 AA.
XX
AC   AAG67193;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0
US-10-023-182-1 (1-752) x AAG67193 (1-10)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10

RESULT 213
AAG67198
ID   AAG67198 standard; peptide; 10 AA.
XX
AC   AAG67198;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67198 (1-10)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTGCTT 317
              ||||||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeuLeu 10

RESULT 214
AAG97545
ID   AAG97545 standard; peptide; 10 AA.
XX
AC   AAG97545;
```

XX
DT 18-SEP-2001 (first entry)
XX
DE Human complementary peptide, SEQ ID NO: 3740.
XX
KW Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
PR 13-DEC-1999; 99GB-00029464.
XX
PA (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 6; Page 580; 646pp; English.
XX
CC The invention relates to a set of complementary peptide ligands generated
CC from the human genome. The complementary peptides interact with their
CC relevant target proteins encoded in the human genome. They can be used as
CC reagents in drug discovery and as lead ligands to facilitate drug design
CC and development. The present sequence is a complementary peptide provided
CC in the specification
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG97545 (1-10)

```
Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGGGCC 212
              ||||||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArgAla 10
```

RESULT 215
AAG93818
ID AAG93818 standard; peptide; 10 AA.
XX
AC AAG93818;
XX
DT 18-SEP-2001 (first entry)
XX
DE Human complementary peptide, SEQ ID NO: 12.
XX
KW Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
PR 13-DEC-1999; 99GB-00029464.
XX
PA (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 4; Page 42; 646pp; English.
XX
CC The invention relates to a set of complementary peptide ligands generated
CC from the human genome. The complementary peptides interact with their
CC relevant target proteins encoded in the human genome. They can be used as
CC reagents in drug discovery and as lead ligands to facilitate drug design
CC and development. The present sequence is a complementary peptide provided
CC in the specification
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG93818 (1-10)

```
Qy        225 GGAGGCGCCCCGCGGGGTCCGCATGGCGGC 254
              ||||||||||||||||||||||||||||||
Db          1 GlyGlyAlaProArgGlyProHisGlyGly 10
```

RESULT 216
AAG97546
ID AAG97546 standard; peptide; 10 AA.
XX
AC AAG97546;
XX
DT 18-SEP-2001 (first entry)
XX
DE Human complementary peptide, SEQ ID NO: 3741.
XX
KW Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
PR 13-DEC-1999; 99GB-00029464.
XX
PA (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 6; Page 580; 646pp; English.
XX

```
CC   The invention relates to a set of complementary peptide ligands generated
CC   from the human genome. The complementary peptides interact with their
CC   relevant target proteins encoded in the human genome. They can be used as
CC   reagents in drug discovery and as lead ligands to facilitate drug design
CC   and development. The present sequence is a complementary peptide provided
CC   in the specification
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAG97546 (1-10)

Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGGGCC 212
              ||||||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArgAla 10

RESULT 217
AAB31331
ID   AAB31331 standard; peptide; 10 AA.
XX
AC   AAB31331;
XX
DT   20-APR-2001  (first entry)
XX
DE   Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW   MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW   MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS   Homo sapiens.
XX
PN   WO200078806-A1.
XX
PD   28-DEC-2000.
XX
PF   14-JUN-2000; 2000WO-US016287.
XX
PR   18-JUN-1999;   99US-00336091.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Van Snick J,  Lethe B,  Chaux P,  Boon-Falleur T,  Van Der Bruggen P;
XX
DR   WPI; 2001-102698/11.
XX
PT   Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT   are presented to the class II molecules, useful for inducing immune
PT   response and treating cancers characterized by expression of MAGE-A1.
XX
PS   Disclosure; Page 32; 78pp; English.
XX
CC   AAB31302-59 represent exemplary antigens which are characteristic of
CC   tumours. They can be used to enhance the immune response of vaccines
CC   comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC   antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC   binding protein stimulate the activity and proliferation of CD4+ T
CC   lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC   agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC   The protein is used for treating a disorder characterized by expression
CC   of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC   colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC   derived from the MAGE-A1 HLA binding protein are useful in the production
CC   of anti-tumour vaccines
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB31331 (1-10)

Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArg 10

RESULT 218
AAB31332
ID   AAB31332 standard; peptide; 10 AA.
XX
AC   AAB31332;
XX
DT   20-APR-2001  (first entry)
XX
DE   Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW   MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW   MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS   Homo sapiens.
XX
PN   WO200078806-A1.
XX
PD   28-DEC-2000.
XX
PF   14-JUN-2000; 2000WO-US016287.
XX
PR   18-JUN-1999;   99US-00336091.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Van Snick J,  Lethe B,  Chaux P,  Boon-Falleur T,  Van Der Bruggen P;
XX
DR   WPI; 2001-102698/11.
XX
PT   Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT   are presented to the class II molecules, useful for inducing immune
PT   response and treating cancers characterized by expression of MAGE-A1.
XX
PS   Disclosure; Page 32; 78pp; English.
XX
CC   AAB31302-59 represent exemplary antigens which are characteristic of
CC   tumours. They can be used to enhance the immune response of vaccines
CC   comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC   antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC   binding protein stimulate the activity and proliferation of CD4+ T
CC   lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC   agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC   The protein is used for treating a disorder characterized by expression
CC   of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC   colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC   derived from the MAGE-A1 HLA binding protein are useful in the production
CC   of anti-tumour vaccines
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB31332 (1-10)
```

```
Qy        145 CTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              ||||||||||||||||||||||||||||||
Db          1 LeuAlaAlaGlnGluArgArgValProArg 10
```

RESULT 219
AAB85307
ID AAB85307 standard; peptide; 10 AA.
XX
AC AAB85307;
XX
DT 17-SEP-2001 (first entry)
XX
DE HLA-A2 binding NY-ESO-1 peptide (residues 157-166).
XX
KW NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;
KW HLA-A2; T-cell sorter; tumor; immune tetramer.
XX
OS Homo sapiens.
XX
PN WO200136453-A2.
XX
PD 25-MAY-2001.
XX
PF 08-NOV-2000; 2000WO-US042010.
XX
PR 15-NOV-1999; 99US-00440621.
PR 25-FEB-2000; 2000US-00514036.
PR 29-SEP-2000; 2000US-00676005.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYOX-) UNIV OXFORD.
XX
PI Valmori D, Cerottini J, Romero P, Cerundolo V;
XX
DR WPI; 2001-451454/48.
XX
PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell
PT presents human leukocyte antigen-A2 molecule on its surface, binds to
PT human leukocyte antigen molecules and provokes lysis by cytolytic T
PT cells.
XX
PS Example 11; Page 11; 38pp; English.
XX
CC The invention provides NY-ESO-1 peptide derivatives which bind to human
CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells
CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLLMWITQX, where X is an
CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide
CC derivatives are useful for determining if a cell presents an HLA-A2
CC molecule on its surface, by contacting a sample containing the cell with
CC the peptide or its derivative, and determining binding between them,
CC where the binding is indicative of HLA-A2 on the surface of the cell. The
CC NY-ESO-1 peptides and analogues are useful therapeutically, for
CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1
CC in connection with the pathology, as well as diagnostically, i.e. to
CC determine if HLA-A2 positive cells are present, or if relevant CTLs are
CC present. They are also useful for determining the presence of CTLs in a
CC sample. The peptides are useful as T-cell sorters, when incorporated into
CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that
CC can bind to HLA-A2 molecule
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB85307 (1-10)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGCTTT 551
              ||||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCysPhe 10
```

RESULT 220
AAE07734
ID AAE07734 standard; peptide; 10 AA.
XX
AC AAE07734;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human MHC class I restricted NY ESO-1 cancer peptide #2.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 16; Page 84; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class I
CC restricted human NY ESO-1 cancer peptide
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07734 (1-10)

```
Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArg 10
```

RESULT 221
AAE07785
ID AAE07785 standard; peptide; 10 AA.
XX
AC AAE07785;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #19 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07785 (1-10)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGly 10
```

RESULT 222
AAE07778
ID AAE07778 standard; peptide; 10 AA.
XX
AC AAE07778;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 epitope.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 64; Page 81; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC epitope
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07778 (1-10)

```
Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTGTTT 563
              ||||||||||||||||||||||||||||||
Db          1 TrpIleThrGlnCysPheLeuProValPhe 10
```

RESULT 223
AAE07730
ID AAE07730 standard; peptide; 10 AA.
XX
AC AAE07730;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #16.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 4; Page 74; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE07730 (1-10)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGly 10
```

RESULT 224
ABG79072
ID ABG79072 standard; peptide; 10 AA.
XX
AC ABG79072;
XX
DT 15-NOV-2002 (first entry)
XX
DE Human CAMEL class I HLA widely expressed antigen peptide #1.
XX
KW Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;
KW lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;
KW Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;
KW kidney cancer; adenocarcinoma; breast cancer; prostate cancer;
KW ovarian cancer; pancreatic cancer; epitope; vaccine; dendritic cell;
KW tumour infiltrating lymphocyte; TIL; human leukocyte antigen; HLA;
KW cytostatic; human.
XX
OS Homo sapiens.
XX
PN WO200264057-A2.
XX
PD 22-AUG-2002.
XX
PF 15-FEB-2002; 2002WO-US005212.
XX
PR 15-FEB-2001; 2001US-0268687P.
XX
PA (BAYU) BAYLOR COLLEGE MEDICINE.
XX
PI Wang R;
XX
DR WPI; 2002-627577/67.
XX
PT Novel composition for treating a disease in an animal, comprises an
PT immune effector cell and cell penetrating peptide associated with an
PT antigen or antibody.
XX
PS Disclosure; Page 17; 61pp; English.
XX
CC The invention relates to a composition (I) comprising an immune effector
CC cell and a cell penetrating peptide (CPP) associated with an antigen or
CC antibody. Also included are (1) a vaccine comprising (I), CPP associated
CC with an antigen, and a pharmaceutically acceptable carrier and (2)
CC preparing a composition for a disease, by providing (I) and CPP
CC associated with an antigen for disease, and introducing the antigen-
CC associated CPP to (I), where antigen enters into the cell. The antigens
CC are, for example, tumour antigen derived epitopes recognised by tumour
CC infiltrating lymphocytes (TIL) of HLA (human leukocyte antigen) class I
CC or II. The composition is useful for enhancing immunity in an animal to a
CC disease, by administering a mature dendritic cell comprising CPP
CC associated with an antigen to disease, to the animal, such that following
CC the administration, animal is protected from disease, where the animal
CC comprises both CD4+ and CD8+ T cells. It is also useful for treating a
CC disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung
CC cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine
CC cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,
CC breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).
CC The animal is further subjected to a cancer treatment including surgery,
CC radiation, chemotherapy or gene therapy. The administration of (I),
CC preferably dendritic cell is prior to, subsequent to or concurrent with,
CC the cancer treatment. The present sequence is a tumour antigen derived
CC epitope for inclusion in the composition of the invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10

```
Score:                  10.00          Matches:        10
Percent Similarity:     100.00%        Conservative:   0
Best Local Similarity:  100.00%        Mismatches:     0
Query Match:            5.56%          Indels:         0
DB:                     1              Gaps:           0

US-10-023-182-1 (1-752) x ABG79072 (1-10)

Qy         94 ATGCTGATGGCCCAGGAGGCCCTGGCATTC 123
              ||||||||||||||||||||||||||||||
Db          1 MetLeuMetAlaGlnGluAlaLeuAlaPhe 10

RESULT 225
ABG79130
ID   ABG79130 standard; peptide; 10 AA.
XX
AC   ABG79130;
XX
DT   15-NOV-2002  (first entry)
XX
DE   Human NY-ESO-1 class II HLA tumour-restricted antigen peptide #1.
XX
KW   Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;
KW   lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;
KW   Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;
KW   kidney cancer; adenocarcinoma; breast cancer; prostate cancer;
KW   ovarian cancer; pancreatic cancer; epitope; vaccine; dendritic cell;
KW   tumour infiltrating lymphocyte; TIL; human leukocyte antigen; HLA;
KW   cytostatic; human.
XX
OS   Homo sapiens.
XX
PN   WO200264057-A2.
XX
PD   22-AUG-2002.
XX
PF   15-FEB-2002; 2002WO-US005212.
XX
PR   15-FEB-2001; 2001US-0268687P.
XX
PA   (BAYU ) BAYLOR COLLEGE MEDICINE.
XX
PI   Wang R;
XX
DR   WPI; 2002-627577/67.
XX
PT   Novel composition for treating a disease in an animal, comprises an
PT   immune effector cell and cell penetrating peptide associated with an
PT   antigen or antibody.
XX
PS   Disclosure; Page 21; 61pp; English.
XX
CC   The invention relates to a composition (I) comprising an immune effector
CC   cell and a cell penetrating peptide (CPP) associated with an antigen or
CC   antibody. Also included are (1) a vaccine comprising (I), CPP associated
CC   with an antigen, and a pharmaceutically acceptable carrier and (2)
CC   preparing a composition for a disease, by providing (I) and CPP
CC   associated with an antigen for disease, and introducing the antigen-
CC   associated CPP to (I), where antigen enters into the cell. The antigens
CC   are, for example, tumour antigen derived epitopes recognised by tumour
CC   infiltrating lymphocytes (TIL) of HLA (human leukocyte antigen) class I
CC   or II. The composition is useful for enhancing immunity in an animal to a
CC   disease, by administering a mature dendritic cell comprising CPP
CC   associated with an antigen to disease, to the animal, such that following
CC   the administration, animal is protected from disease, where the animal
CC   comprises both CD4+ and CD8+ T cells. It is also useful for treating a
CC   disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung
CC   cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine
CC   cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,
CC   breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).
CC   The animal is further subjected to a cancer treatment including surgery,
CC   radiation, chemotherapy or gene therapy. The administration of (I),
CC   preferably dendritic cell is prior to, subsequent to or concurrent with,
CC   the cancer treatment. The present sequence is a tumour antigen derived
CC   epitope for inclusion in the composition of the invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153            Length:         10
Score:                  10.00          Matches:        10
Percent Similarity:     100.00%        Conservative:   0
Best Local Similarity:  100.00%        Mismatches:     0
Query Match:            5.56%          Indels:         0
DB:                     1              Gaps:           0

US-10-023-182-1 (1-752) x ABG79130 (1-10)

Qy         414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
               ||||||||||||||||||||||||||||||
Db           1 ValLeuLeuLysGluPheThrValSerGly 10

RESULT 226
ABG66803
ID   ABG66803 standard; peptide; 10 AA.
XX
AC   ABG66803;
XX
DT   24-SEP-2002  (first entry)
XX
DE   Tumour antigen NY-ESO-1/CAG3 ORF2, HLA-A31 epitope.
XX
KW   Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;
KW   human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;
KW   gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;
KW   liver cancer; biliary tract cancer; pancreatic cancer; vaccine;
KW   prostatic cancer; testicular cancer; lung cancer; breast cancer;
KW   malignant melanoma; mesothelioma; brain tumour; ovarian cancer;
KW   uterine cancer; cervical cancer; head and neck cancer; bladder cancer;
KW   Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;
KW   acquired immunodeficiency syndrome; AIDS-related lymphoma.
XX
OS   Homo sapiens.
XX
PN   WO200236146-A2.
XX
PD   10-MAY-2002.
XX
PF   01-NOV-2001; 2001WO-GB004844.
XX
PR   02-NOV-2000; 2000GB-00026812.
XX
PA   (ISIS-) ISIS INNOVATION LTD.
XX
PI   Tafuro S,  Meier U,  Mcmichael AJ,  Bell JI,  Layton G,  Hunter M;
XX
DR   WPI; 2002-508108/54.
XX
PT   New polynucleotide capable of expressing an epitope-beta2m fusion protein
PT   useful for generating cytotoxic T lymphocyte responses against a tumor
PT   and in restoring antigen presentation in the tumor of a host.
XX
PS   Disclosure; Page 25; 46pp; English.
XX
CC   The invention relates to a new polynucleotide capable of expressing an
CC   epitope-beta_2m fusion protein useful for generating cytotoxic T
CC   lymphocyte (CTL) responses against a tumour or in restoring antigen
CC   presentation in the tumour of a host. Also included are a polynucleotide
CC   capable of expressing an epitope-beta_2m fusion protein in combination
CC   with a vaccination agent that stimulates a CTL response against the
CC   epitope of the fusion protein for simultaneous, separate or sequential
CC   use in the treatment of cancer and a method of treating a tumour by
CC   administering a capable of expressing an epitope-beta_2m fusion protein,
CC   and optionally a vaccination agent that stimulates a CTL response against
CC   the epitope of the fusion protein. The polynucleotide is useful for
CC   generating CTL responses against tumours, for restoring antigen
```

```
CC   presentation in the tumour, and subsequently for treating cancers, such
CC   as gastrointestinal tumour, prostatic, testicular, lung or breast cancer,
CC   malignant melanoma, mesothelioma, brain tumour, ovarian cancer, uterine
CC   cancer including cervical cancer, cancer of the head and neck, bladder
CC   cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome)-
CC   related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and
CC   haematopoietic malignant tumours such as leukaemia and lymphoma. The
CC   epitope is an HLA (human leukocyte antigen) peptide derived from a viral
CC   or tumour antigen. The present sequence is a tumour HLA epitope used in
CC   the fusion proteins of the invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153           Length:         10
Score:                    10.00         Matches:        10
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              5.56%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x ABG66803 (1-10)

Qy        145 CTGGCGGCCCAGGAGAGGCGGGTGCCACGG 174
              ||||||||||||||||||||||||||||||
Db          1 LeuAlaAlaGlnGluArgArgValProArg 10

RESULT 227
ABG66802
ID   ABG66802 standard; peptide; 10 AA.
XX
AC   ABG66802;
XX
DT   24-SEP-2002  (first entry)
XX
DE   Tumour antigen NY-ESO-1/CAG3 ORF1, HLA-A31 epitope.
XX
KW   Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;
KW   human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;
KW   gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;
KW   liver cancer; biliary tract cancer; pancreatic cancer; vaccine;
KW   prostatic cancer; testicular cancer; lung cancer; breast cancer;
KW   malignant melanoma; mesothelioma; brain tumour; ovarian cancer;
KW   uterine cancer; cervical cancer; head and neck cancer; bladder cancer;
KW   Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;
KW   acquired immunodeficiency syndrome; AIDS-related lymphoma.
XX
OS   Homo sapiens.
XX
PN   WO200236146-A2.
XX
PD   10-MAY-2002.
XX
PF   01-NOV-2001; 2001WO-GB004844.
XX
PR   02-NOV-2000; 2000GB-00026812.
XX
PA   (ISIS-) ISIS INNOVATION LTD.
XX
PI   Tafuro S,  Meier U,  Mcmichael AJ,  Bell JI,  Layton G,  Hunter M;
XX
DR   WPI; 2002-508108/54.
XX
PT   New polynucleotide capable of expressing an epitope-beta2m fusion protein
PT   useful for generating cytotoxic T lymphocyte responses against a tumor
PT   and in restoring antigen presentation in the tumor of a host.
XX
PS   Disclosure; Page 25; 46pp; English.
XX
CC   The invention relates to a new polynucleotide capable of expressing an
CC   epitope-beta_2m fusion protein useful for generating cytotoxic T
CC   lymphocyte (CTL) responses against a tumour or in restoring antigen
CC   presentation in the tumour of a host. Also included are a polynucleotide
CC   capable of expressing an epitope-beta_2m fusion protein in combination
CC   with a vaccination agent that stimulates a CTL response against the
CC   epitope of the fusion protein for simultaneous, separate or sequential
CC   use in the treatment of cancer and a method of treating a tumour by
CC   administering a capable of expressing an epitope-beta_2m fusion protein,
CC   and optionally a vaccination agent that stimulates a CTL response against
CC   the epitope of the fusion protein. The polynucleotide is useful for
CC   generating CTL responses against tumours, for restoring antigen
CC   presentation in the tumour, and subsequently for treating cancers, such
CC   as gastrointestinal tumour, prostatic, testicular, lung or breast cancer,
CC   malignant melanoma, mesothelioma, brain tumour, ovarian cancer, uterine
CC   cancer including cervical cancer, cancer of the head and neck, bladder
CC   cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome)-
CC   related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and
CC   haematopoietic malignant tumours such as leukaemia and lymphoma. The
CC   epitope is an HLA (human leukocyte antigen) peptide derived from a viral
CC   or tumour antigen. The present sequence is a tumour HLA epitope used in
CC   the fusion proteins of the invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153           Length:         10
Score:                    10.00         Matches:        10
Percent Similarity:       100.00%       Conservative:   0
Best Local Similarity:    100.00%       Mismatches:     0
Query Match:              5.56%         Indels:         0
DB:                       1             Gaps:           0

US-10-023-182-1 (1-752) x ABG66802 (1-10)

Qy        210 GCCTCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||||||||
Db          1 AlaSerGlyProGlyGlyGlyAlaProArg 10

RESULT 228
ABP74299
ID   ABP74299 standard; peptide; 10 AA.
XX
AC   ABP74299;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:183.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
```

CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74299 (1-10)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              ||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPhe 10
```

RESULT 229
ABP74302
ID ABP74302 standard; peptide; 10 AA.
XX
AC ABP74302;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:186.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74302 (1-10)

```
Qy        429 TTCACTGTGTCCGGCAACATACTGACTATC 458
              ||||||||||||||||||||||||||||||
Db          1 PheThrValSerGlyAsnIleLeuThrIle 10
```

RESULT 230
ABP74317
ID ABP74317 standard; peptide; 10 AA.
XX
AC ABP74317;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:201.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is

CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74317 (1-10)

```
Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTGTTG 530
              ||||||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeuLeu 10
```

RESULT 231
ABP74295
ID ABP74295 standard; peptide; 10 AA.
XX
AC ABP74295;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:179.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74295 (1-10)

```
Qy        393 CCACCGCTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||||||||
Db          1 ProProLeuProValProGlyValLeuLeu 10
```

RESULT 232
ABP74292
ID ABP74292 standard; peptide; 10 AA.
XX
AC ABP74292;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:176.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

```
Alignment Scores:
Pred. No.:              153             Length:         10
Score:                  10.00           Matches:        10
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.56%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x ABP74292 (1-10)

Qy        330 GCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||
Db          1 AlaMetProPheAlaThrProMetGluAla 10

RESULT 233
ABP74287
ID   ABP74287 standard; peptide; 10 AA.
XX
AC   ABP74287;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:171.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 17; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153             Length:         10
Score:                  10.00           Matches:        10
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.56%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x ABP74287 (1-10)

Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              ||||||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPheTyr 10

RESULT 234
ABP74474
ID   ABP74474 standard; peptide; 10 AA.
XX
AC   ABP74474;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:358.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 22; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153             Length:         10
Score:                  10.00           Matches:        10
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.56%           Indels:         0
DB:                     1               Gaps:           0
```

```
US-10-023-182-1 (1-752) x ABP74474 (1-10)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCGGCT 260
              ||||||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAlaAla 10

RESULT 235
ABP74297
ID   ABP74297 standard; peptide; 10 AA.
XX
AC   ABP74297;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:181.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
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PT   antigens.
XX
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XX
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CC   cluster. Also described is a vaccine or immunotherapeutic composition
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CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74297 (1-10)

Qy        360 GAGCTGGCCCGCAGGAGCCTGGCCCAGGAT 389
              ||||||||||||||||||||||||||||||
Db          1 GluLeuAlaArgArgSerLeuAlaGlnAsp 10

RESULT 236
ABP74473
ID   ABP74473 standard; peptide; 10 AA.
XX
AC   ABP74473;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:357.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 22; 352pp; English.
XX
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CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74473 (1-10)

Qy        240 GGTCCGCATGGCGGCGCGGCTTCAGGGCTG 269
              ||||||||||||||||||||||||||||||
Db          1 GlyProHisGlyGlyAlaAlaSerGlyLeu 10

RESULT 237
```

```
ABP74291
ID   ABP74291 standard; peptide; 10 AA.
XX
AC   ABP74291;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:175.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74291 (1-10)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10

RESULT 238
ABP74304
ID   ABP74304 standard; peptide; 10 AA.
XX
AC   ABP74304;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:188.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
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CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
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CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74304 (1-10)

Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGly 10

RESULT 239
ABP74307
ID   ABP74307 standard; peptide; 10 AA.
XX
AC   ABP74307;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:191.
```

XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
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CC cluster. Also described is a vaccine or immunotherapeutic composition
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CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
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CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74307 (1-10)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              ||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPhe 10
```

RESULT 240
ABP74310
ID ABP74310 standard; peptide; 10 AA.
XX
AC ABP74310;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:194.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
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CC cluster. Also described is a vaccine or immunotherapeutic composition
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CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74310 (1-10)

```
Qy        492 CTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||
Db          1 LeuSerIleSerSerCysLeuGlnGlnLeu 10
```

RESULT 241
ABP74311
ID ABP74311 standard; peptide; 10 AA.
XX
AC ABP74311;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:195.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX

PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
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CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74311 (1-10)

```
Qy        465 ACTGCTGCAGACCACCGCCAACTGCAGCTC 494
              ||||||||||||||||||||||||||||||
Db          1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10
```

RESULT 242
ABP74319
ID ABP74319 standard; peptide; 10 AA.
XX
AC ABP74319;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:203.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
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XX
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CC cluster. Also described is a vaccine or immunotherapeutic composition
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CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74319 (1-10)

```
Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTTTTG 566
              ||||||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPheLeu 10
```

RESULT 243
ABU64848
ID ABU64848 standard; peptide; 10 AA.
XX
AC ABU64848;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #32.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX

```
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.56%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ABU64848 (1-10)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCGGCT 260
              ||||||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAlaAla 10

RESULT 244
ABU64843
ID   ABU64843 standard; peptide; 10 AA.
XX
AC   ABU64843;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #27.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:         10
Score:                  10.00         Matches:        10
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
```

```
Query Match:            5.56%       Indels:        0
DB:                     1           Gaps:          0

US-10-023-182-1 (1-752) x ABU64843 (1-10)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTGAAG 425
              ||||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeuLys 10

RESULT 245
ABU64853
ID   ABU64853 standard; peptide; 10 AA.
XX
AC   ABU64853;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #37.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 7; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153         Length:        10
Score:                  10.00       Matches:       10
Percent Similarity:     100.00%     Conservative:  0
Best Local Similarity:  100.00%     Mismatches:    0
Query Match:            5.56%       Indels:        0
DB:                     1           Gaps:          0

US-10-023-182-1 (1-752) x ABU64853 (1-10)

Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGGATC 539
              ||||||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrpIle 10

RESULT 246
ABU64852
ID   ABU64852 standard; peptide; 10 AA.
XX
AC   ABU64852;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #36.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 7; 18pp; English.
XX
```

```
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64852 (1-10)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIleThr 10

RESULT 247
ABU64851
ID   ABU64851 standard; peptide; 10 AA.
XX
AC   ABU64851;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #35.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 7; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64851 (1-10)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10

RESULT 248
ABU64842
ID   ABU64842 standard; peptide; 10 AA.
XX
AC   ABU64842;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #26.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
```

KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64842 (1-10)

```
Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              ||||||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPheTyr 10
```

RESULT 249
ABU64841
ID ABU64841 standard; peptide; 10 AA.
XX
AC ABU64841;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #25.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The

```
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153          Length:        10
Score:                    10.00        Matches:       10
Percent Similarity:       100.00%      Conservative:  0
Best Local Similarity:    100.00%      Mismatches:    0
Query Match:              5.56%        Indels:        0
DB:                       1            Gaps:          0

US-10-023-182-1 (1-752) x ABU64841 (1-10)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10

RESULT 250
ABU64845
ID   ABU64845 standard; peptide; 10 AA.
XX
AC   ABU64845;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #29.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153          Length:        10
Score:                    10.00        Matches:       10
Percent Similarity:       100.00%      Conservative:  0
Best Local Similarity:    100.00%      Mismatches:    0
Query Match:              5.56%        Indels:        0
DB:                       1            Gaps:          0

US-10-023-182-1 (1-752) x ABU64845 (1-10)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTGCTT 419
              ||||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyValLeu 10

RESULT 251
ABU64846
ID   ABU64846 standard; peptide; 10 AA.
XX
AC   ABU64846;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #30.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
```

XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64846 (1-10)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTGCTT 317
              ||||||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeuLeu 10
```

RESULT 252
ABU64844
ID ABU64844 standard; peptide; 10 AA.
XX
AC ABU64844;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #28.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64844 (1-10)

```
Qy        372 AGGAGCCTGGCCCAGGATGCCCCACCGCTT 401
              ||||||||||||||||||||||||||||||
Db          1 ArgSerLeuAlaGlnAspAlaProProLeu 10
```

RESULT 253

```
ABU64850
ID   ABU64850 standard; peptide; 10 AA.
XX
AC   ABU64850;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #34.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 7; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153          Length:         10
Score:                  10.00        Matches:        10
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            5.56%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x ABU64850 (1-10)

Qy        465 ACTGCTGCAGACCACCGCCAACTGCAGCTC 494
                ||||||||||||||||||||||||||||||
Db          1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10

RESULT 254
ADC09161
ID   ADC09161 standard; peptide; 10 AA.
XX
AC   ADC09161;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 186.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 186; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153          Length:         10
```

```
Score:                  10.00          Matches:        10
Percent Similarity:     100.00%        Conservative:   0
Best Local Similarity:  100.00%        Mismatches:     0
Query Match:            5.56%          Indels:         0
DB:                     1              Gaps:           0

US-10-023-182-1 (1-752) x ADC09161 (1-10)

Qy        429 TTCACTGTGTCCGGCAACATACTGACTATC 458
              ||||||||||||||||||||||||||||||
Db          1 PheThrValSerGlyAsnIleLeuThrIle 10

RESULT 255
ADC09150
ID   ADC09150 standard; peptide; 10 AA.
XX
AC   ADC09150;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 175.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 175; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153            Length:         10
Score:                  10.00          Matches:        10
Percent Similarity:     100.00%        Conservative:   0
Best Local Similarity:  100.00%        Mismatches:     0
Query Match:            5.56%          Indels:         0
DB:                     1              Gaps:           0

US-10-023-182-1 (1-752) x ADC09150 (1-10)

Qy        312 CTGCTTGAGTTCTACCTCGCCATGCCTTTC 341
              ||||||||||||||||||||||||||||||
Db          1 LeuLeuGluPheTyrLeuAlaMetProPhe 10

RESULT 256
ADC09176
ID   ADC09176 standard; peptide; 10 AA.
XX
AC   ADC09176;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 201.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 201; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153            Length:         10
Score:                  10.00          Matches:        10
Percent Similarity:     100.00%        Conservative:   0
Best Local Similarity:  100.00%        Mismatches:     0
Query Match:            5.56%          Indels:         0
DB:                     1              Gaps:           0

US-10-023-182-1 (1-752) x ADC09176 (1-10)
```

```
Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTGTTG 530
              ||||||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeuLeu 10
```

RESULT 257
ADC09151
ID ADC09151 standard; peptide; 10 AA.
XX
AC ADC09151;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 176.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 176; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09151 (1-10)

```
Qy        330 GCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||
Db          1 AlaMetProPheAlaThrProMetGluAla 10
```

RESULT 258
ADC09163
ID ADC09163 standard; peptide; 10 AA.
XX
AC ADC09163;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 188.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 188; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09163 (1-10)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSerGly 10
```

RESULT 259
ADC09170
ID ADC09170 standard; peptide; 10 AA.
XX

```
AC   ADC09170;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 195.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 195; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ADC09170 (1-10)

Qy        465 ACTGCTGCAGACCACCGCCAACTGCAGCTC 494
              ||||||||||||||||||||||||||||||
Db          1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10

RESULT 260
ADC09332
ID   ADC09332 standard; peptide; 10 AA.
XX
AC   ADC09332;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 357.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 357; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:              153           Length:        10
Score:                  10.00         Matches:       10
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.56%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ADC09332 (1-10)

Qy        240 GGTCCGCATGGCGGCGCGGCTTCAGGGCTG 269
              ||||||||||||||||||||||||||||||
Db          1 GlyProHisGlyGlyAlaAlaSerGlyLeu 10

RESULT 261
ADC09146
ID   ADC09146 standard; peptide; 10 AA.
XX
AC   ADC09146;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 171.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
```

```
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 171; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ADC09146 (1-10)

Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              ||||||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPheTyr 10

RESULT 262
ADC09154
ID   ADC09154 standard; peptide; 10 AA.
XX
AC   ADC09154;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 179.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 179; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 10 AA;

Alignment Scores:
Pred. No.:                153             Length:         10
Score:                    10.00           Matches:        10
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.56%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ADC09154 (1-10)

Qy        393 CCACCGCTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||||||||
Db          1 ProProLeuProValProGlyValLeuLeu 10

RESULT 263
ADC09156
ID   ADC09156 standard; peptide; 10 AA.
XX
AC   ADC09156;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 181.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
```

PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 181; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09156 (1-10)

```
Qy        360 GAGCTGGCCCGCAGGAGCCTGGCCCAGGAT 389
              ||||||||||||||||||||||||||||||
Db          1 GluLeuAlaArgArgSerLeuAlaGlnAsp 10
```

RESULT 264
ADC09178
ID ADC09178 standard; peptide; 10 AA.
XX
AC ADC09178;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 203.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 203; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09178 (1-10)

```
Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTTTTG 566
              ||||||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPheLeu 10
```

RESULT 265
ADC09169
ID ADC09169 standard; peptide; 10 AA.
XX
AC ADC09169;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 194.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX

PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 194; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09169 (1-10)

```
Qy        492 CTCTCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||||||
Db          1 LeuSerIleSerSerCysLeuGlnGlnLeu 10
```

RESULT 266
ADC09166
ID ADC09166 standard; peptide; 10 AA.
XX
AC ADC09166;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 191.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 191; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09166 (1-10)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              ||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPhe 10
```

RESULT 267
ADC09333
ID ADC09333 standard; peptide; 10 AA.
XX
AC ADC09333;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 358.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX

PS Claim 1; SEQ ID NO 358; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09333 (1-10)

```
Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCGGCT 260
              ||||||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAlaAla 10
```

RESULT 268
ADC09158
ID ADC09158 standard; peptide; 10 AA.
XX
AC ADC09158;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 183.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 183; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09158 (1-10)

```
Qy        402 CCCGTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              ||||||||||||||||||||||||||||||
Db          1 ProValProGlyValLeuLeuLysGluPhe 10
```

RESULT 269
ADD35567
ID ADD35567 standard; peptide; 10 AA.
XX
AC ADD35567;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:17.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Example 9; SEQ ID NO 17; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an

CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35567 (1-10)

```
Qy        330 GCCATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||||
Db          1 AlaMetProPheAlaThrProMetGluAla 10
```

RESULT 270
ADD35562
ID ADD35562 standard; peptide; 10 AA.
XX
AC ADD35562;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:12.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Example 1; SEQ ID NO 12; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 10 AA;

Alignment Scores:

Pred. No.:	153	Length:	10
Score:	10.00	Matches:	10
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.56%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35562 (1-10)

```
Qy        342 GCGACACCCATGGAAGCAGAGCTGGCCCGC 371
              ||||||||||||||||||||||||||||||
Db          1 AlaThrProMetGluAlaGluLeuAlaArg 10
```

RESULT 271
AAU85106
ID AAU85106 standard; peptide; 30 AA.
XX
AC AAU85106;
XX
DT 08-MAY-2002 (first entry)
XX
DE Human NYNSO1a segment 5.
XX
KW Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW viral infection; human immunodeficieny virus; melanoma;
KW bacterial infection; Salmonella; Legionella; parasitic infection;
KW Trypanosoma; Toxoplasma; Giardia.
XX
OS Homo sapiens.
XX
PN WO200190197-A1.

```
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36926.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              226           Length:         30
Score:                  10.00         Matches:        10
Percent Similarity:     33.33%        Conservative:   0
Best Local Similarity:  33.33%        Mismatches:     20
Query Match:            5.62%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAU85106 (1-30)

Qy        394 GGGGCATCCTGGGCCAGGCTCCTGCGGGCCAGCTCTGCTTCCATGGGTGTCGCGAAAGGC 335
              ||||||                        |||   |||         |||
Db          1 GlyAlaProArgGlyProHisGlyGlyAlaAlaSerGlyLeuAsnGlyCysCysArgCys 20

Qy        334 ATGGCGAGGTAGAACTCAAGCAGGCGGCTC 305
                ||||||         ||||||   |||
Db         21 GlyAlaArgGlyProGluSerArgLeuLeu 30

RESULT 272
AAU85107
ID   AAU85107 standard; peptide; 30 AA.
XX
AC   AAU85107;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1a segment 6.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36927.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              226           Length:         30
Score:                  10.00         Matches:        10
Percent Similarity:     33.33%        Conservative:   0
Best Local Similarity:  33.33%        Mismatches:     20
Query Match:            5.62%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAU85107 (1-30)

Qy        349 GGTGTCGCGAAAGGCATGGCGAGGTAGAACTCAAGCAGGCGGCTCTCCGGCCCCCTGGCC 290
              |||                 ||||||         ||||||   |||         ||||||
Db          1 GlyCysCysArgCysGlyAlaArgGlyProGluSerArgLeuLeuGluPheTyrLeuAla 20

Qy        289 CCGCATCTGCAGCATCCATTCAGCCCTGAA 260
                          |||         |||
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```
Db          21 MetProPheAlaThrProMetGluAlaGlu 30

RESULT 273
ADD35566
ID   ADD35566 standard; peptide; 30 AA.
XX
AC   ADD35566;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:16.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
OS   Homo sapiens.
XX
PN   WO2003068800-A2.
XX
PD   21-AUG-2003.
XX
PF   12-FEB-2003; 2003WO-US004182.
XX
PR   13-FEB-2002; 2002US-0355828P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Jager E,  Knuth A,  Old L,  Gnjatic S;
XX
DR   WPI; 2003-902684/82.
XX
PT   New isolated peptide that binds to an HLA molecule, useful for treating a
PT   subject with a disorder characterized by the presence of complexes of an
PT   HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT   response.
XX
PS   Example 9; SEQ ID NO 16; 73pp; English.
XX
CC   The present invention describes an isolated peptide (I) consisting of 8-
CC   11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC   B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC   complexes of the peptide and the HLA molecule, where at least 8
CC   contiguous amino acids of the peptide consist of at least 8 contiguous
CC   amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC   described: (1) a composition comprising (I) and a carrier; (2) an
CC   isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC   expression vector comprising the nucleic acid of (2) in operable linkage
CC   with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC   or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC   specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC   of (5); (7) a polytope comprising at least two of (I) that are linked
CC   together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC   isolated tetramer comprising the HLA molecule, biotin and a binding
CC   partner; (10) a composition comprising the tetramer and a carrier; (11)
CC   inducing an immune response in a subject; (12) treating a subject with a
CC   disorder characterised by the presence of complexes of an HLA molecule
CC   and the peptide; (13) a combinatorial library of derivatives of (I),
CC   where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC   for an analogue of (I); (15) an isolated antibody or its fragment that
CC   specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC   soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC   and (17) inducing an immune response on a subject having a disorder
CC   characterised by the presence of the HLA molecule and the peptide. (I)
CC   has cytostatic activity, and can be used in gene therapy. The peptides,
CC   nucleic acid molecules, vectors, compositions, antibodies and methods are
CC   useful for treating a subject with a disorder characterised by the
CC   presence of complexes of an HLA molecule and the peptide, and for
CC   inducing an immune response. The present sequence represents a human NY-
CC   ESO-1 peptide, which is used in the exemplification of the present
CC   invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              226          Length:         30
Score:                  10.00        Matches:        10
Percent Similarity:     38.46%       Conservative:   0
Best Local Similarity:  38.46%       Mismatches:     16
Query Match:            5.62%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x ADD35566 (1-30)

Qy        331 GCGAGGTAGAACTCAAGCAGGCGGCTCTCCGGCCCCCTGGCCCCGCATCTGCAGCATCCA 272
              ||||||          ||||||   |||          ||||||                |||
Db          1 AlaArgGlyProGluSerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaThrPro 20

Qy        271 TTCAGCCCTGAAGCCGCG 254
                  |||   |||
Db         21 MetGluAlaGluLeuAla 26

RESULT 274
AAW62586
ID   AAW62586 standard; peptide; 9 AA.
XX
AC   AAW62586;
XX
DT   17-SEP-1998  (first entry)
XX
DE   Cancer associated antigen peptide.
XX
KW   Cancer associated antigen; NY-ESO-1; regression; progression; onset;
KW   cancer; treatment; diagnosis.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9814464-A1.
XX
PD   09-APR-1998.
XX
PF   15-SEP-1997;   97WO-US016335.
XX
PR   03-OCT-1996;   96US-00725182.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Chen Y,  Scanlan M,  Gure A,  Old LJ,  Jager E,  Knuth A;
PI   Drijfhout JW;
XX
DR   WPI; 1998-286417/25.
XX
PT   New isolated cancer associated antigen - is used to develop products for
PT   the diagnosis and treatment of cancers and for monitoring cancer therapy.
XX
PS   Claim 33; Page 17; 49pp; English.
XX
CC   Peptides AAW62585-87 are derived from cancer associated antigen NY-ESO-1,
CC   and are stimulators of cytotoxic T-cells. The specification describes a
CC   method for determining regression, progression of onset of a cancerous
CC   condition, comprising monitoring a sample from a patient with the
CC   cancerous condition for a parameter selected from NY-ESO-1 protein, a
CC   peptide derived from NY-ESO-1 protein and cytolytic T cells specific for
CC   the peptide and an MHC molecule with which it non-covalently complexes.
CC   Methods for the treatment of a cancerous condition are also described.
CC   The NY-ESO-1 protein and peptides derived from it can be used for
CC   diagnosis and treatment of cancers and to monitor the efficacy of a
CC   therapeutic regime
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:         9
Score:                  9.00         Matches:        9
Percent Similarity:     100.00%      Conservative:   0
```

```
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAW62586 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 275
AAW62587
ID   AAW62587 standard; peptide; 9 AA.
XX
AC   AAW62587;
XX
DT   17-SEP-1998  (first entry)
XX
DE   Cancer associated antigen peptide.
XX
KW   Cancer associated antigen; NY-ESO-1; regression; progression; onset;
KW   cancer; treatment; diagnosis.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
PN   WO9814464-A1.
XX
PD   09-APR-1998.
XX
PF   15-SEP-1997;   97WO-US016335.
XX
PR   03-OCT-1996;   96US-00725182.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Chen Y,  Scanlan M,  Gure A,  Old LJ,  Jager E,  Knuth A;
PI   Drijfhout JW;
XX
DR   WPI; 1998-286417/25.
XX
PT   New isolated cancer associated antigen - is used to develop products for
PT   the diagnosis and treatment of cancers and for monitoring cancer therapy.
XX
PS   Claim 33; Page 17; 49pp; English.
XX
CC   Peptides AAW62585-87 are derived from cancer associated antigen NY-ESO-1,
CC   and are stimulators of cytotoxic T-cells. The specification describes a
CC   method for determining regression, progression of onset of a cancerous
CC   condition, comprising monitoring a sample from a patient with the
CC   cancerous condition for a parameter selected from NY-ESO-1 protein, a
CC   peptide derived from NY-ESO-1 protein and cytolytic T cells specific for
CC   the peptide and an MHC molecule with which it non-covalently complexes.
CC   Methods for the treatment of a cancerous condition are also described.
CC   The NY-ESO-1 protein and peptides derived from it can be used for
CC   diagnosis and treatment of cancers and to monitor the efficacy of a
CC   therapeutic regime
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAW62587 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 276
AAY06031
ID   AAY06031 standard; peptide; 9 AA.
XX
AC   AAY06031;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 14) corresponds to amino acid residues 153-160 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x AAY06031 (1-9)

Qy        510 CTCCAGCAGCTTTCCCTGTTGATGTGG 536
              |||||||||||||||||||||||||||
Db          1 LeuGlnGlnLeuSerLeuLeuMetTrp 9

RESULT 277
AAY06030
ID   AAY06030 standard; peptide; 9 AA.
```

```
XX
AC   AAY06030;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 13) corresponds to amino acid residues 127-135 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816           Length:        9
Score:                   9.00          Matches:       9
Percent Similarity:      100.00%       Conservative:  0
Best Local Similarity:   100.00%       Mismatches:    0
Query Match:             5.00%         Indels:        0
DB:                      1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06030 (1-9)

Qy        432 ACTGTGTCCGGCAACATACTGACTATC 458
              |||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIle 9

RESULT 278
AAY06041
ID   AAY06041 standard; peptide; 9 AA.
XX
AC   AAY06041;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 24) corresponds to amino acid residues 164-172 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816           Length:        9
Score:                   9.00          Matches:       9
Percent Similarity:      100.00%       Conservative:  0
Best Local Similarity:   100.00%       Mismatches:    0
Query Match:             5.00%         Indels:        0
DB:                      1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06041 (1-9)

Qy        543 CAGTGCTTTCTGCCCGTGTTTTTGGCT 569
              |||||||||||||||||||||||||||
Db          1 GlnCysPheLeuProValPheLeuAla 9

RESULT 279
AAY06052
ID   AAY06052 standard; peptide; 9 AA.
XX
AC   AAY06052;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ES09-89.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
```

KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO9-89 corresponds to amino acid residues 171-179 of human NY
CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC of eliciting an antigen specific immune response by T cells. It was
CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC release of granulocyte macrophage colony stimulating factor. Cancer
CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC their variants, are useful as cancer vaccines. A claimed method of
CC preventing or inhibiting cancer involves administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06052 (1-9)

```
Qy        564 TTGGCTCAGCCTCCCTCAGGGCAGAGG 590
              |||||||||||||||||||||||||||
Db          1 LeuAlaGlnProProSerGlyGlnArg 9
```

RESULT 280
AAY06023
ID AAY06023 standard; peptide; 9 AA.
XX
AC AAY06023;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 6) corresponds to amino acid residues 44-52 of CAG-1 ORF1
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06023 (1-9)

```
Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGG 209
              |||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArg 9
```

RESULT 281
AAY06046
ID AAY06046 standard; peptide; 9 AA.
XX
AC AAY06046;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX

PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 29) corresponds to amino acid residues 54-62 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06046 (1-9)

```
Qy        213 TCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              |||||||||||||||||||||||||||
Db          1 SerGlyProGlyGlyGlyAlaProArg 9
```

RESULT 282
AAY06021
ID AAY06021 standard; peptide; 9 AA.
XX
AC AAY06021;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 4) corresponds to amino acid residues 86-94 of CAG-1 ORF1
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06021 (1-9)

```
Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATG 335
              |||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMet 9
```

RESULT 283
AAY06038
ID AAY06038 standard; peptide; 9 AA.
XX
AC AAY06038;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX

PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 21) corresponds to amino acid residues 135-143 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06038 (1-9)

```
Qy        456 ATCCGACTGACTGCTGCAGACCACCGC 482
              |||||||||||||||||||||||||||
Db          1 IleArgLeuThrAlaAlaAspHisArg 9
```

RESULT 284
AAY06042
ID AAY06042 standard; peptide; 9 AA.
XX
AC AAY06042;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 25) corresponds to amino acid residues 143-151 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06042 (1-9)

```
Qy        480 CGCCAACTGCAGCTCTCCATCAGCTCC 506
              |||||||||||||||||||||||||||
Db          1 ArgGlnLeuGlnLeuSerIleSerSer 9
```

RESULT 285
AAY06050
ID AAY06050 standard; peptide; 9 AA.
XX
AC AAY06050;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide ES09-38.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX

```
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ESO9-38 corresponds to amino acid residues 38-46 of human NY ESO-
CC   1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. It was examined
CC   for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC   granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC   AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC   are useful as cancer vaccines. A claimed method of preventing or
CC   inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06050 (1-9)

Qy        165 GGTGCCACGGGCGGCAGAGGTCCCCGG 191
              |||||||||||||||||||||||||||
Db          1 GlyAlaThrGlyGlyArgGlyProArg 9

RESULT 286
AAY06019
ID   AAY06019 standard; peptide; 9 AA.
XX
AC   AAY06019;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 2) corresponds to amino acid residues 98-106 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06019 (1-9)

Qy        345 ACACCCATGGAAGCAGAGCTGGCCCGC 371
              |||||||||||||||||||||||||||
Db          1 ThrProMetGluAlaGluLeuAlaArg 9

RESULT 287
AAY06034
ID   AAY06034 standard; peptide; 9 AA.
XX
AC   AAY06034;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 17) corresponds to amino acid residues 132-140 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
```

CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06034 (1-9)

```
Qy        447 ATACTGACTATCCGACTGACTGCTGCA 473
              |||||||||||||||||||||||||||
Db          1 IleLeuThrIleArgLeuThrAlaAla 9
```

RESULT 288
AAY06036
ID AAY06036 standard; peptide; 9 AA.
XX
AC AAY06036;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 19) corresponds to amino acid residues 128-136 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06036 (1-9)

```
Qy        435 GTGTCCGGCAACATACTGACTATCCGA 461
              |||||||||||||||||||||||||||
Db          1 ValSerGlyAsnIleLeuThrIleArg 9
```

RESULT 289
AAY06018
ID AAY06018 standard; peptide; 9 AA.
XX
AC AAY06018;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 1) corresponds to amino acid residues 172-180 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX

SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06018 (1-9)

```
Qy        567 GCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              |||||||||||||||||||||||||||
Db          1 AlaGlnProProSerGlyGlnArgArg 9
```

RESULT 290
AAY06022
ID AAY06022 standard; peptide; 9 AA.
XX
AC AAY06022;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 5) corresponds to amino acid residues 38-46 of CAG-1 ORF1
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06022 (1-9)

```
Qy        165 GGTGCCACGGGCGGCAGAGGTCCCCGG 191
              |||||||||||||||||||||||||||
Db          1 GlyAlaThrGlyGlyArgGlyProArg 9
```

RESULT 291
AAY06025
ID AAY06025 standard; peptide; 9 AA.
XX
AC AAY06025;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 8) corresponds to amino acid residues 154-162 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0

```
DB:                    1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06025 (1-9)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATC 539
              ||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 292
AAY06045
ID   AAY06045 standard; peptide; 9 AA.
XX
AC   AAY06045;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 28) corresponds to amino acid residues 134-142 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06045 (1-9)

Qy        453 ACTATCCGACTGACTGCTGCAGACCAC 479
              ||||||||||||||||||||||||||
Db          1 ThrIleArgLeuThrAlaAlaAspHis 9

RESULT 293
AAY06054
ID   AAY06054 standard; peptide; 9 AA.
XX
AC   AAY06054;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ES09-35.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ES09-35 corresponds to amino acid residues 135-143 of human NY
CC   ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC   of eliciting an antigen specific immune response by T cells. It was
CC   examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC   release of granulocyte macrophage colony stimulating factor. Cancer
CC   peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC   their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06054 (1-9)

Qy        456 ATCCGACTGACTGCTGCAGACCACCGC 482
              ||||||||||||||||||||||||||
Db          1 IleArgLeuThrAlaAlaAspHisArg 9

RESULT 294
```

```
AAY06039
ID   AAY06039 standard; peptide; 9 AA.
XX
AC   AAY06039;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 22) corresponds to amino acid residues 152-160 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06039 (1-9)

Qy        507 TGTCTCCAGCAGCTTTCCCTGTTGATG 533
              |||||||||||||||||||||||||||
Db          1 CysLeuGlnGlnLeuSerLeuLeuMet 9

RESULT 295
AAY06044
ID   AAY06044 standard; peptide; 9 AA.
XX
AC   AAY06044;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 27) corresponds to amino acid residues 73-81 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06044 (1-9)

Qy        270 AATGGATGCTGCAGATGCGGGGCCAGG 296
              |||||||||||||||||||||||||||
Db          1 AsnGlyCysCysArgCysGlyAlaArg 9

RESULT 296
AAY06048
ID   AAY06048 standard; peptide; 9 AA.
XX
AC   AAY06048;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ES09-98.
```

XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO9-90 corresponds to amino acid residues 98-106 of human NY ESO
CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. It was examined
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC are useful as cancer vaccines. A claimed method of preventing or
CC inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06048 (1-9)

```
Qy        345 ACACCCATGGAAGCAGAGCTGGCCCGC 371
              |||||||||||||||||||||||||||
Db          1 ThrProMetGluAlaGluLeuAlaArg 9
```

RESULT 297
AAY05987
ID AAY05987 standard; peptide; 9 AA.
XX
AC AAY05987;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ES09-90.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Claim 51; Page 45; 88pp; English.
XX
CC This sequence represents cancer peptide ES09-90 that corresponds to amino
CC acid residues 171-180 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see
CC AAY05965), a new and potent tumour antigen capable of eliciting an
CC antigen specific immune response by T cells. Cancer peptides derived from
CC CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their
CC variants (see AAY05967-87), are useful as cancer vaccines that protect
CC against cancer. The invention provides: vectors and host cells (also
CC useful as vaccines); a method of diagnosis of cancer or precancer; a
CC transgenic animal; antisense oligonucleotides that inhibit expression of
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC cancer peptide, useful in diagnostic and detection assays; and methods
CC for preventing or inhibiting cancer by administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC treated by inducing cancer-specific T cells in vitro for subsequent
CC return to a patient
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05987 (1-9)

```
Qy        567 GCTCAGCCTCCCTCAGGGCAGAGGCGC 593
              |||||||||||||||||||||||||||
Db          1 AlaGlnProProSerGlyGlnArgArg 9
```

RESULT 298
AAY06040
ID AAY06040 standard; peptide; 9 AA.
XX
AC AAY06040;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;

```
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 23) corresponds to amino acid residues 110-118 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06040 (1-9)

Qy        381 GCCCAGGATGCCCCACCGCTTCCCGTG 407
              |||||||||||||||||||||||||||
Db          1 AlaGlnAspAlaProProLeuProVal 9

RESULT 299
AAY05968
ID   AAY05968 standard; peptide; 9 AA.
XX
AC   AAY05968;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ES09-54.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Claim 29; Page 10; 88pp; English.
XX
CC   This sequence represents cancer peptide ES09-54 that corresponds to amino
CC   acid residues 55-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965),
CC   a new and potent tumour antigen capable of eliciting an antigen specific
CC   immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-
CC   3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-
CC   87), are useful as cancer vaccines that protect against cancer. The
CC   invention provides: vectors and host cells (also useful as vaccines); a
CC   method of diagnosis of cancer or precancer; a transgenic animal;
CC   antisense oligonucleotides that inhibit expression of the cancer peptide
CC   or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
CC   useful in diagnostic and detection assays; and methods for preventing or
CC   inhibiting cancer by administering a cancer peptide, with or without an
CC   HLA molecule. The cancer peptides form part of, or are derived from,
CC   cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by
CC   inducing cancer-specific T cells in vitro for subsequent return to a
CC   patient
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY05968 (1-9)

Qy        213 TCGGGGCCGGGAGGAGGCGCCCCGCGG 239
              |||||||||||||||||||||||||||
Db          1 SerGlyProGlyGlyGlyAlaProArg 9

RESULT 300
AAY06026
ID   AAY06026 standard; peptide; 9 AA.
XX
AC   AAY06026;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
```

```
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 9) corresponds to amino acid residues 116-124 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816          Length:        9
Score:                   9.00         Matches:       9
Percent Similarity:      100.00%      Conservative:  0
Best Local Similarity:   100.00%      Mismatches:    0
Query Match:             5.00%        Indels:        0
DB:                      1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06026 (1-9)

Qy        399 CTTCCCGTGCCAGGGGTGCTTCTGAAG 425
              |||||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeuLys 9

RESULT 301
AAY06027
ID   AAY06027 standard; peptide; 9 AA.
XX
AC   AAY06027;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 10) corresponds to amino acid residues 120-128 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816          Length:        9
Score:                   9.00         Matches:       9
Percent Similarity:      100.00%      Conservative:  0
Best Local Similarity:   100.00%      Mismatches:    0
Query Match:             5.00%        Indels:        0
DB:                      1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06027 (1-9)

Qy        411 GGGGTGCTTCTGAAGGAGTTCACTGTG 437
              |||||||||||||||||||||||||||
Db          1 GlyValLeuLeuLysGluPheThrVal 9

RESULT 302
AAY06028
ID   AAY06028 standard; peptide; 9 AA.
XX
AC   AAY06028;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
```

PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 11) corresponds to amino acid residues 131-139 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06028 (1-9)

```
Qy        444 AACATACTGACTATCCGACTGACTGCT 470
              |||||||||||||||||||||||||||
Db          1 AsnIleLeuThrIleArgLeuThrAla 9
```

RESULT 303
AAY06037
ID AAY06037 standard; peptide; 9 AA.
XX
AC AAY06037;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC peptide (ranked 20) corresponds to amino acid residues 145-133 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06037 (1-9)

```
Qy        486 CTGCAGCTCTCCATCAGCTCCTGTCTC 512
              |||||||||||||||||||||||||||
Db          1 LeuGlnLeuSerIleSerSerCysLeu 9
```

RESULT 304
AAY06051
ID AAY06051 standard; peptide; 9 AA.
XX
AC AAY06051;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 peptide ES09-38.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; cytotoxic T lymphocyte; CTL.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX

DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 45; 88pp; English.
XX
CC Peptide ESO9-45 corresponds to amino acid residues 46-52 of human NY ESO-
CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. It was examined
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC are useful as cancer vaccines. A claimed method of preventing or
CC inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06051 (1-9)

```
Qy        183 GGTCCCCGGGGCGCAGGGGCAGCAAGG 209
              |||||||||||||||||||||||||||
Db          1 GlyProArgGlyAlaGlyAlaAlaArg 9
```

RESULT 305
AAY05981
ID AAY05981 standard; peptide; 9 AA.
XX
AC AAY05981;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
DR N-PSDB; AAX58602.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Claim 27; Page 65; 88pp; English.
XX
CC The present sequence represents a cancer peptide that corresponds to
CC amino acid residues 19-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see
CC AAY05966), a new and potent tumour antigen capable of eliciting an
CC antigen specific immune response by T cells. Cancer peptides derived from
CC CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their
CC variants (see AAY05967-87), are useful as cancer vaccines that protect
CC against cancer. The invention provides: vectors and host cells (also
CC useful as vaccines); a method of diagnosis of cancer or precancer; a
CC transgenic animal; antisense oligonucleotides that inhibit expression of
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
CC cancer peptide, useful in diagnostic and detection assays; and methods
CC for preventing or inhibiting cancer by administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
CC treated by inducing cancer-specific T cells in vitro for subsequent
CC return to a patient
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY05981 (1-9)

```
Qy        148 GCGGCCCAGGAGAGGCGGGTGCCACGG 174
              |||||||||||||||||||||||||||
Db          1 AlaAlaGlnGluArgArgValProArg 9
```

RESULT 306
AAY06020
ID AAY06020 standard; peptide; 9 AA.
XX
AC AAY06020;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.

```
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 3) corresponds to amino acid residues 99-107 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06020 (1-9)

Qy        348 CCCATGGAAGCAGAGCTGGCCCGCAGG 374
              |||||||||||||||||||||||||||
Db          1 ProMetGluAlaGluLeuAlaArgArg 9

RESULT 307
AAY06035
ID   AAY06035 standard; peptide; 9 AA.
XX
AC   AAY06035;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 18) corresponds to amino acid residues 148-156 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06035 (1-9)

Qy        495 TCCATCAGCTCCTGTCTCCAGCAGCTT 521
              |||||||||||||||||||||||||||
Db          1 SerIleSerSerCysLeuGlnGlnLeu 9

RESULT 308
AAY06024
ID   AAY06024 standard; peptide; 9 AA.
XX
AC   AAY06024;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 7) corresponds to amino acid residues 171-179 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
```

```
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06024 (1-9)

Qy        564 TTGGCTCAGCCTCCCTCAGGGCAGAGG 590
              |||||||||||||||||||||||||||
Db          1 LeuAlaGlnProProSerGlyGlnArg 9

RESULT 309
AAY06049
ID   AAY06049 standard; peptide; 9 AA.
XX
AC   AAY06049;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ES09-99.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ES09-99 corresponds to amino acid residues 99-107 of human NY ESO
CC   -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. It was examined
CC   for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC   granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC   AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC   are useful as cancer vaccines. A claimed method of preventing or
CC   inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY06049 (1-9)

Qy        348 CCCATGGAAGCAGAGCTGGCCCGCAGG 374
              |||||||||||||||||||||||||||
Db          1 ProMetGluAlaGluLeuAlaArgArg 9

RESULT 310
AAY06053
ID   AAY06053 standard; peptide; 9 AA.
XX
AC   AAY06053;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide ES09-128.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 45; 88pp; English.
XX
CC   Peptide ES09-128 corresponds to amino acid residues 128-136 of human NY
CC   ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
CC   of eliciting an antigen specific immune response by T cells. It was
CC   examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
CC   release of granulocyte macrophage colony stimulating factor. Cancer
CC   peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
CC   their variants, are useful as cancer vaccines. A claimed method of
CC   preventing or inhibiting cancer involves administering a cancer peptide,
CC   with or without an HLA molecule. The cancer peptides form part of, or are
CC   derived from, cancers such as primary or metastatic melanoma, thymoma,
CC   lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC   cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC   as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
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```
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAY06053 (1-9)

Qy        435 GTGTCCGGCAACATACTGACTATCCGA 461
              |||||||||||||||||||||||||||
Db          1 ValSerGlyAsnIleLeuThrIleArg 9

RESULT 311
AAY06043
ID   AAY06043 standard; peptide; 9 AA.
XX
AC   AAY06043;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 26) corresponds to amino acid residues 108-116 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAY06043 (1-9)

Qy        375 AGCCTGGCCCAGGATGCCCCACCGCTT 401
              |||||||||||||||||||||||||||
Db          1 SerLeuAlaGlnAspAlaProProLeu 9

RESULT 312
AAY06032
ID   AAY06032 standard; peptide; 9 AA.
XX
AC   AAY06032;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 15) corresponds to amino acid residues 159-167 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
```

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DB:                    1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06032 (1-9)

Qy        528 TTGATGTGGATCACGCAGTGCTTTCTG 554
              ||||||||||||||||||||||||||
Db          1 LeuMetTrpIleThrGlnCysPheLeu 9

RESULT 313
AAY06033
ID   AAY06033 standard; peptide; 9 AA.
XX
AC   AAY06033;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 16) corresponds to amino acid residues 158-166 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06033 (1-9)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTT 551
              |||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPhe 9

RESULT 314
AAY06047
ID   AAY06047 standard; peptide; 9 AA.
XX
AC   AAY06047;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; human leukocyte antigen; HLA.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 10; Page 43; 88pp; English.
XX
CC   This peptide was identified as an HLA peptide motif following a screen
CC   for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC   AAX58599). 30 Epitopes (see AAY06018-47) were identified. The present
CC   peptide (ranked 30) corresponds to amino acid residues 69-77 of CAG-1
CC   ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC   eliciting an antigen specific immune response by T cells. Cancer peptides
CC   (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
CC   variants, are useful as cancer vaccines. A claimed method of preventing
CC   or inhibiting cancer involves administering a cancer peptide, with or
CC   without an HLA molecule. The cancer peptides form part of, or are derived
CC   from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC   sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC   cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC   prostate, ovarian, pancreatic and thyroid cancers
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY06047 (1-9)

Qy        258 GCTTCAGGGCTGAATGGATGCTGCAGA 284
              |||||||||||||||||||||||||||
Db          1 AlaSerGlyLeuAsnGlyCysCysArg 9
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RESULT 315
AAY01763
ID   AAY01763 standard; peptide; 9 AA.
XX
AC   AAY01763;
XX
DT   25-JUN-1999  (first entry)
XX
DE   Exemplary antigenic peptide derived from NY-ESO-1.
XX
KW   MAGE-3; tumour associated gene; human leucocyte antigen Class II;
KW   autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;
KW   osteosarcoma; leukemia; carcinoma.
XX
OS   Homo sapiens.
XX
PN   WO9914326-A1.
XX
PD   25-MAR-1999.
XX
PF   04-SEP-1998;   98WO-US018601.
XX
PR   12-SEP-1997;   97US-00928615.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI   Thielemans K,  Heirman C,  Corthals J,  Chaux P,  Stroobant V;
PI   Boon-Falleur T,  Van Der Bruggen P,  Luiten R;
XX
DR   WPI; 1999-244031/20.
XX
PT   Isolated peptides that bind to human leucocyte antigen class II
PT   molecules.
XX
PS   Disclosure; Page 29; 88pp; English.
XX
CC   The present sequence represents an exemplary tumour associated peptide
CC   antigen. The specification describes a MAGE-3 tumour associated gene.
CC   Peptides (AAY01721-25) that bind human leucocyte antigen (HLA) Class II
CC   molecules can be derived from the MAGE-3 protein. These peptides and
CC   autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA
CC   Class II, are used to treat MAGE-3 related diseases, particularly cancers
CC   (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).
CC   The peptides are also used to produce specific antibodies. Detection of
CC   of the peptides, e.g. in binding assays, particularly with antibodies, is
CC   used for diagnosis of such diseases
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY01763 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 316
AAY01762
ID   AAY01762 standard; peptide; 9 AA.
XX
AC   AAY01762;
XX
DT   25-JUN-1999  (first entry)
XX
DE   Exemplary antigenic peptide derived from NY-ESO-1.
XX
KW   MAGE-3; tumour associated gene; human leucocyte antigen Class II;
KW   autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;
KW   osteosarcoma; leukemia; carcinoma.
XX
OS   Homo sapiens.
XX
PN   WO9914326-A1.
XX
PD   25-MAR-1999.
XX
PF   04-SEP-1998;   98WO-US018601.
XX
PR   12-SEP-1997;   97US-00928615.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI   Thielemans K,  Heirman C,  Corthals J,  Chaux P,  Stroobant V;
PI   Boon-Falleur T,  Van Der Bruggen P,  Luiten R;
XX
DR   WPI; 1999-244031/20.
XX
PT   Isolated peptides that bind to human leucocyte antigen class II
PT   molecules.
XX
PS   Disclosure; Page 29; 88pp; English.
XX
CC   The present sequence represents an exemplary tumour associated peptide
CC   antigen. The specification describes a MAGE-3 tumour associated gene.
CC   Peptides (AAY01721-25) that bind human leucocyte antigen (HLA) Class II
CC   molecules can be derived from the MAGE-3 protein. These peptides and
CC   autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA
CC   Class II, are used to treat MAGE-3 related diseases, particularly cancers
CC   (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).
CC   The peptides are also used to produce specific antibodies. Detection of
CC   of the peptides, e.g. in binding assays, particularly with antibodies, is
CC   used for diagnosis of such diseases
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY01762 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 317
AAY52433
ID   AAY52433 standard; peptide; 9 AA.
XX
AC   AAY52433;
XX
DT   15-FEB-2000  (first entry)
XX
DE   Human tumour antigen NY-ESO-1 peptide #6.
XX
KW   Cancer; tumour; antigen; MHC; major histocompatility complex; Class I;
KW   T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;
KW   prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW   hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS   Synthetic.
OS   Homo sapiens.
XX
```

PN WO9953938-A1.
XX
PD 28-OCT-1999.
XX
PF 24-MAR-1999; 99WO-US006875.
XX
PR 17-APR-1998; 98US-00062422.
PR 02-OCT-1998; 98US-00165546.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
PI Gure A, Ritter G;
XX
DR WPI; 2000-038483/03.
XX
PT Novel peptides which bind to MHC class I and MHC class II molecules,
PT useful for therapeutic and diagnostic purposes.
XX
PS Claim 60; Page 18; 49pp; English.
XX
CC Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human
CC tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIT
CC (AAY52441). These sequences can bind to MHC (major histocompatibility
CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic
CC T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus
CC squamous cell cancer cDNA library. Tissue localisation studies revealed
CC it to be expressed at high levels in normal ovary and testis but not in
CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed
CC in certain tumours and tumour cell lines with some degree of frequency -
CC these included melanoma specimens and cell lines, and breast and bladder
CC cancer specimens, with expression in other tumour types being sporadic.
CC These NY-ESO-1-derived peptides may be used in methods and compositions
CC used for the treatment, diagnosis and prevention of cancers (such as
CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian
CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the
CC proliferation of T cells
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY52433 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 318
AAY52432
ID AAY52432 standard; peptide; 9 AA.
XX
AC AAY52432;
XX
DT 15-FEB-2000 (first entry)
XX
DE Human tumour antigen NY-ESO-1 peptide #5.
XX
KW Cancer; tumour; antigen; MHC; major histocompatility complex; Class I;
KW T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;
KW prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KW hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
OS Synthetic.
OS Homo sapiens.
XX
PN WO9953938-A1.
XX
PD 28-OCT-1999.
XX
PF 24-MAR-1999; 99WO-US006875.
XX
PR 17-APR-1998; 98US-00062422.
PR 02-OCT-1998; 98US-00165546.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
PI Gure A, Ritter G;
XX
DR WPI; 2000-038483/03.
XX
PT Novel peptides which bind to MHC class I and MHC class II molecules,
PT useful for therapeutic and diagnostic purposes.
XX
PS Claim 60; Page 18; 49pp; English.
XX
CC Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human
CC tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIT
CC (AAY52441). These sequences can bind to MHC (major histocompatibility
CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic
CC T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus
CC squamous cell cancer cDNA library. Tissue localisation studies revealed
CC it to be expressed at high levels in normal ovary and testis but not in
CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed
CC in certain tumours and tumour cell lines with some degree of frequency -
CC these included melanoma specimens and cell lines, and breast and bladder
CC cancer specimens, with expression in other tumour types being sporadic.
CC These NY-ESO-1-derived peptides may be used in methods and compositions
CC used for the treatment, diagnosis and prevention of cancers (such as
CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian
CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the
CC proliferation of T cells
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY52432 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 319
AAB22791
ID AAB22791 standard; peptide; 9 AA.
XX
AC AAB22791;
XX
DT 22-DEC-2000 (first entry)
XX
DE NY-ESO-1 peptide epitope, SEQ ID NO:2.
XX
KW NY-ESO-1; epitope; CTL response; cytotoxic T lymphocyte; vaccine;
KW immunogenic; adjuvant coadministration; microbial infection;
KW tuberculosis; HIV; hepatitis B virus; hepatitis C virus; cancer.
XX
OS Unidentified.
XX
PN WO200048630-A1.
XX
PD 24-AUG-2000.
XX

```
PF   17-FEB-2000; 2000WO-AU000110.
XX
PR   17-FEB-1999;   99AU-00008735.
PR   27-JUL-1999;   99AU-00001861.
XX
PA   (CSLC-) CSL LTD.
XX
PI   Cox JC,  Drane DP;
XX
DR   WPI; 2000-571930/53.
XX
PT   Immunogenic complexes comprising negatively charged organic carrier
PT   adjuvants and positively charged antigens for use as vaccines against
PT   microbial infection and cancer.
XX
PS   Example 4; Fig 5c; 111pp; English.
XX
CC   The invention relates to a novel immunogenic complex comprising a charged
CC   organic carrier and a charged antigen which are electrostatically
CC   associated. The complex induces a cytotoxic T lymphocyte (CTL) response.
CC   The complex and/or vaccine can be used to treat a disease in a mammal,
CC   where the complex/vaccine elicits, induces or otherwise facilitates an
CC   immune response which inhibits, halts, delays or prevents the onset or
CC   progression of the disease condition. In particular, the disease is a
CC   condition resulting form a microbial infection or cancer. Microbial
CC   infections which may be treated using the immunogenic complex include
CC   human immunodeficiency virus (HIV), hepatitis B, hepatitis C,
CC   tuberculosis or a parasitic condition, and cancers which may be treated
CC   include melanoma, prostate cancer or breast cancer. The complexes and
CC   vaccines simultaneously co-deliver antigen and adjuvant to the same
CC   antigen presenting cell, which is often essential for induction of
CC   appropriate immune responses. Sequences AAB22790-B22791 represent peptide
CC   epitopes of the positively charged protein NY-ESO-1 used in an
CC   exemplification of the invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAB22791 (1-9)

Qy         522 TCCCTGTTGATGTGGATCACGCAGTGC 548
               |||||||||||||||||||||||||||
Db           1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 320
AAY70857
ID   AAY70857 standard; peptide; 9 AA.
XX
AC   AAY70857;
XX
DT   31-JUL-2000  (first entry)
XX
DE   CAMEL10 immunogenic peptide of human CAMEL protein.
XX
KW   CAMEL; CTL-recognised Antigen on MELanoma; cytotoxic T lymphocyte; CTL;
KW   tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;
KW   cancer; immunotherapy; immunogenic peptide; immune response.
XX
OS   Homo sapiens.
XX
PN   WO200023584-A1.
XX
PD   27-APR-2000.
XX
PF   15-OCT-1999;   99WO-EP007832.
XX
PR   16-OCT-1998;   98EP-00119583.
XX
PA   (BOEH ) BOEHRINGER INGELHEIM INT GMBH.
PA   (UYHO-) UNIV HOSPITAL LEIDEN.
XX
PI   Schrier PI,  Aarnoudse CA,  Heider K,  Klade C;
XX
DR   WPI; 2000-339685/29.
XX
PT   Tumor-associated antigen useful for cancer immunotherapy is encoded by
PT   the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
XX
PS   Claim 6; Page 34; 73pp; English.
XX
CC   The present sequence is an immunogenic peptide CAMEL 10, of the human
CC   tumour-associated antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised
CC   Antigen on MELanoma). This peptide has the potential to bind to HLA-A2
CC   and corresponds to residues 10-18 of the CAMEL protein. The CAMEL protein
CC   is encoded by the LAGE-1 gene, a tumour-specific antigen. It is different
CC   from the LAGE-1 protein, since it is translated from a different open
CC   reading frame (ORF-1). It shows strong homology with NY-ESO-1, a melanoma
CC   specific tumour antigen. The tumour-associated antigen displayed on
CC   melanoma cells is recognised by cytotoxic T lymphocytes. CAMEL is
CC   expressed in tumour cell lines, tumour tissues (e.g. breast and lung) and
CC   in restricted number of healthy tissues. This sequence has anticancer
CC   activity. CAMEL tumour antigen and immunogenic peptides derived from it
CC   are useful for cancer immunotherapy. They have the potential to induce an
CC   immune response, by eliciting a CTL response. The DNA molecule is used to
CC   construct recombinant or fusion proteins
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAY70857 (1-9)

Qy         121 TTCCTGATGGCCCAGGGGGCAATGCTG 147
               |||||||||||||||||||||||||||
Db           1 PheLeuMetAlaGlnGlyAlaMetLeu 9

RESULT 321
AAY70859
ID   AAY70859 standard; peptide; 9 AA.
XX
AC   AAY70859;
XX
DT   31-JUL-2000  (first entry)
XX
DE   CAMEL17 immunogenic peptide of human CAMEL protein.
XX
KW   CAMEL; CTL-recognised Antigen on MELanoma; cytotoxic T lymphocyte; CTL;
KW   tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;
KW   cancer; immunotherapy; immunogenic peptide; immune response.
XX
OS   Homo sapiens.
XX
PN   WO200023584-A1.
XX
PD   27-APR-2000.
XX
PF   15-OCT-1999;   99WO-EP007832.
XX
PR   16-OCT-1998;   98EP-00119583.
XX
PA   (BOEH ) BOEHRINGER INGELHEIM INT GMBH.
PA   (UYHO-) UNIV HOSPITAL LEIDEN.
XX
```

PI Schrier PI, Aarnoudse CA, Heider K, Klade C;
XX
DR WPI; 2000-339685/29.
XX
PT Tumor-associated antigen useful for cancer immunotherapy is encoded by
PT the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
XX
PS Claim 8; Page 34; 73pp; English.
XX
CC The present sequence is an immunogenic peptide CAMEL 17, of the human
CC tumour-associated antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised
CC Antigen on MELanoma). This peptide has the potential to bind to HLA-A2
CC and corresponds to residues 17-25 of the CAMEL protein. The CAMEL protein
CC is encoded by the LAGE-1 gene, a tumour-specific antigen. It is different
CC from the LAGE-1 protein, since it is translated from a different open
CC reading frame (ORF-1). It shows strong homology with NY-ESO-1, a melanoma
CC specific tumour antigen. The tumour-associated antigen displayed on
CC melanoma cells is recognised by cytotoxic T lymphocytes. CAMEL is
CC expressed in tumour cell lines, tumour tissues (e.g. breast and lung) and
CC in restricted number of healthy tissues. This sequence has anticancer
CC activity. CAMEL tumour antigen and immunogenic peptides derived from it
CC are useful for cancer immunotherapy. They have the potential to induce an
CC immune response, by eliciting a CTL response. The DNA molecule is used to
CC construct recombinant or fusion proteins
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY70859 (1-9)

```
Qy        142 ATGCTGGCGGCCCAGGAGAGGCGGGTG 168
              |||||||||||||||||||||||||||
Db          1 MetLeuAlaAlaGlnGluArgArgVal 9
```

RESULT 322
AAY79749
ID AAY79749 standard; peptide; 9 AA.
XX
AC AAY79749;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #5.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 26; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79749 (1-9)

```
Qy         72 GGCACAGGGGGTTCGACGGGCGATGCT 98
              |||||||||||||||||||||||||||
Db          1 GlyThrGlyGlySerThrGlyAspAla 9
```

RESULT 323
AAY79748
ID AAY79748 standard; peptide; 9 AA.
XX
AC AAY79748;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #4.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX

```
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY79748 (1-9)

Qy        495 TCCATCAGCTCCTGTCTCCAGCAGCTT 521
              |||||||||||||||||||||||||||
Db          1 SerIleSerSerCysLeuGlnGlnLeu 9

RESULT 324
AAY79750
ID   AAY79750 standard; peptide; 9 AA.
XX
AC   AAY79750;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #6.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
```

```
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY79750 (1-9)

Qy        207 AGGGCCTCGGGGCCGGGAGGAGGCGCC 233
              |||||||||||||||||||||||||||
Db          1 ArgAlaSerGlyProGlyGlyGlyAla 9

RESULT 325
AAY79755
ID   AAY79755 standard; peptide; 9 AA.
XX
AC   AAY79755;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #11.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
```

```
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY79755 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 326
AAY79757
ID   AAY79757 standard; peptide; 9 AA.
XX
AC   AAY79757;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #13.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
```

```
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAY79757 (1-9)

Qy        339 TTCGCGACACCCATGGAAGCAGAGCTG 365
              |||||||||||||||||||||||||||
Db          1 PheAlaThrProMetGluAlaGluLeu 9

RESULT 327
AAY79753
ID   AAY79753 standard; peptide; 9 AA.
XX
AC   AAY79753;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #9.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
```

```
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY79753 (1-9)

Qy        429 TTCACTGTGTCCGGCAACATACTGACT 455
              |||||||||||||||||||||||||||
Db          1 PheThrValSerGlyAsnIleLeuThr 9

RESULT 328
AAY79756
ID   AAY79756 standard; peptide; 9 AA.
XX
AC   AAY79756;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #12.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAY79756 (1-9)

Qy        528 TTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||
Db          1 LeuMetTrpIleThrGlnCysPheLeu 9

RESULT 329
AAY78466
ID   AAY78466 standard; peptide; 9 AA.
XX
AC   AAY78466;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived HLA binding peptide #2.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
```

XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Claim 34; Page 33; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY78466 (1-9)

```
Qy        375 AGCCTGGCCCAGGATGCCCCACCGCTT 401
              |||||||||||||||||||||||||||
Db          1 SerLeuAlaGlnAspAlaProProLeu 9
```

RESULT 330
AAY79751
ID AAY79751 standard; peptide; 9 AA.
XX
AC AAY79751;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #7.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 26; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79751 (1-9)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9
```

RESULT 331
AAY79754
ID AAY79754 standard; peptide; 9 AA.
XX
AC AAY79754;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #10.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.

XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 13; Page 26; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY79754 (1-9)

```
Qy        462 CTGACTGCTGCAGACCACCGCCAACTG 488
              |||||||||||||||||||||||||||
Db          1 LeuThrAlaAlaAspHisArgGlnLeu 9
```

RESULT 332
AAY78471
ID AAY78471 standard; peptide; 9 AA.
XX
AC AAY78471;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #3.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.
XX
PR 26-JUN-1998; 98US-00105839.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX
DR WPI; 2000-170933/15.
XX
PT Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
PS Example 12; Page 21; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY78471 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 333
AAY79758
ID AAY79758 standard; peptide; 9 AA.
XX
AC AAY79758;
XX
DT 10-MAY-2000 (first entry)
XX
DE NY-ESO-1 derived peptide #14.
XX
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW melanoma; synovial sarcoma.
XX
OS Homo sapiens.
XX
PN WO200000824-A1.
XX
PD 06-JAN-2000.
XX
PF 25-JUN-1999; 99WO-US014493.

```
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAY79758 (1-9)

Qy        432 ACTGTGTCCGGCAACATACTGACTATC 458
              |||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIle 9

RESULT 334
AAY78465
ID   AAY78465 standard; peptide; 9 AA.
XX
AC   AAY78465;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived HLA binding peptide #1.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Claim 34; Page 33; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAY78465 (1-9)

Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATG 335
              |||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMet 9

RESULT 335
AAY78470
ID   AAY78470 standard; peptide; 9 AA.
XX
AC   AAY78470;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #2.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
```

```
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 12; Page 21; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:         9
Score:                  9.00         Matches:        9
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            5.00%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAY78470 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 336
AAY79752
ID   AAY79752 standard; peptide; 9 AA.
XX
AC   AAY79752;
XX
DT   10-MAY-2000  (first entry)
XX
DE   NY-ESO-1 derived peptide #8.
XX
KW   Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW   HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
KW   melanoma; synovial sarcoma.
XX
OS   Homo sapiens.
XX
PN   WO200000824-A1.
XX
PD   06-JAN-2000.
XX
PF   25-JUN-1999;   99WO-US014493.
XX
PR   26-JUN-1998;   98US-00105839.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Tureci O,  Sahin U,  Pfreundschuh M,  Rammensee G,  Stevanovic S;
PI   Chen Y,  Gure A,  Old LJ;
XX
DR   WPI; 2000-170933/15.
XX
PT   Determining the possible presence of breast, endometrial, colorectal,
PT   lung, bladder or head-neck cancer.
XX
PS   Example 13; Page 26; 40pp; English.
XX
CC   A method has been developed for determining the possible presence of a
CC   cancer, which is not melanoma or synovial sarcoma. The method comprises
CC   assaying a sample taken from the subject to determine the expression of
CC   an SSX gene, and determining the expression as a determination of the
CC   possible presence of cancer. Expression of SSX1 gene indicates possible
CC   presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC   cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC   SSX2 gene expression additionally indicates possible presence of
CC   lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC   SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC   SSX5 gene expression indicates the same cancers as SSX1, except breast
CC   cancer. Determining expression of SSX gene can be used to monitor
CC   progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC   derived peptide complex stimulates proliferation of cytolytic T cells.
CC   This is useful for treating cancer, especially melanoma. AAY78464 to
CC   AAY78468 represent specifically claimed HLA binding peptides for use in
CC   the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC   used in the isolation of SSX genes in the exemplification of the present
CC   invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC   peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC   exemplification of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:         9
Score:                  9.00         Matches:        9
Percent Similarity:     100.00%      Conservative:   0
Best Local Similarity:  100.00%      Mismatches:     0
Query Match:            5.00%        Indels:         0
DB:                     1            Gaps:           0

US-10-023-182-1 (1-752) x AAY79752 (1-9)

Qy        342 GCGACACCCATGGAAGCAGAGCTGGCC 368
              |||||||||||||||||||||||||||
Db          1 AlaThrProMetGluAlaGluLeuAla 9

RESULT 337
AAB02632
ID   AAB02632 standard; peptide; 9 AA.
XX
AC   AAB02632;
XX
DT   18-AUG-2000  (first entry)
XX
DE   Tumour associated peptide antigen from NY-ESO-1 #3.
XX
KW   MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;
KW   cancer; human; tumour; tumour associated gene product.
XX
OS   Homo sapiens.
XX
PN   WO200020581-A1.
XX
```

PD 13-APR-2000.
XX
PF 15-SEP-1999; 99WO-US021230.
XX
PR 05-OCT-1998; 98US-00166448.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI Chaux P, Stroobant V, Boon-Falleur T, Van Der Bruggen P;
PI Schultz ES, Van Snick J, Lethe B, Thielemans K, Corthals J;
PI Heirman C;
XX
DR WPI; 2000-317713/27.
XX
PT New MAGE-A3 class II binding peptides, useful to diagnose and treat
PT tumors, are fragments of MAGE-A3 which bind to and are presented to T
PT lymphocytes by human leukocyte antigen class II molecules.
XX
PS Disclosure; Page 33; 119pp; English.
XX
CC The present invention relates to MAGE-A3 (tumour associated gene product)
CC human leukocyte antigen (HLA) class II-binding peptides (see AAB02566-
CC B02595, and AAB02633-B02637). These peptides are presented to T cells in
CC the context of HLA class II molecules. The peptides stimulate the
CC activity and proliferation of CD4+ T lymphocytes. The invention also
CC includes nucleotide sequences encoding MAGE-3A peptides (see AAA37928 and
CC AAA37938-A37940). The peptides and nucleotide sequences can be used to
CC create antibodies against the MAGE-A3 peptides, the antibodies, peptides
CC and nucleotide sequences can be used to create a vaccine. The peptides
CC are used to diagnose or treat a disorder characterized by expression of
CC MAGE-3, particularly cancer. The methods can also be used in the
CC diagnosis of disorders associated with MAGE-3 expression. Included in the
CC invention are other human tumour antigens (see AAB02596-B02637), and PCR
CC primers used in the course of the invention (see AAA37929-A37937 and
CC AAA37941-A37942)
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB02632 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 338
AAB02631
ID AAB02631 standard; peptide; 9 AA.
XX
AC AAB02631;
XX
DT 18-AUG-2000 (first entry)
XX
DE Tumour associated peptide antigen from NY-ESO-1 #2.
XX
KW MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;
KW cancer; human; tumour; tumour associated gene product.
XX
OS Homo sapiens.
XX
PN WO200020581-A1.
XX
PD 13-APR-2000.
XX
PF 15-SEP-1999; 99WO-US021230.
XX
PR 05-OCT-1998; 98US-00166448.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYVR-) UNIV VRIJE BRUSSEL.
XX
PI Chaux P, Stroobant V, Boon-Falleur T, Van Der Bruggen P;
PI Schultz ES, Van Snick J, Lethe B, Thielemans K, Corthals J;
PI Heirman C;
XX
DR WPI; 2000-317713/27.
XX
PT New MAGE-A3 class II binding peptides, useful to diagnose and treat
PT tumors, are fragments of MAGE-A3 which bind to and are presented to T
PT lymphocytes by human leukocyte antigen class II molecules.
XX
PS Disclosure; Page 33; 119pp; English.
XX
CC The present invention relates to MAGE-A3 (tumour associated gene product)
CC human leukocyte antigen (HLA) class II-binding peptides (see AAB02566-
CC B02595, and AAB02633-B02637). These peptides are presented to T cells in
CC the context of HLA class II molecules. The peptides stimulate the
CC activity and proliferation of CD4+ T lymphocytes. The invention also
CC includes nucleotide sequences encoding MAGE-3A peptides (see AAA37928 and
CC AAA37938-A37940). The peptides and nucleotide sequences can be used to
CC create antibodies against the MAGE-A3 peptides, the antibodies, peptides
CC and nucleotide sequences can be used to create a vaccine. The peptides
CC are used to diagnose or treat a disorder characterized by expression of
CC MAGE-3, particularly cancer. The methods can also be used in the
CC diagnosis of disorders associated with MAGE-3 expression. Included in the
CC invention are other human tumour antigens (see AAB02596-B02637), and PCR
CC primers used in the course of the invention (see AAA37929-A37937 and
CC AAA37941-A37942)
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB02631 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 339
AAB08703
ID AAB08703 standard; peptide; 9 AA.
XX
AC AAB08703;
XX
DT 02-JAN-2001 (first entry)
XX
DE Antigenic peptide from tumour rejection antigen NY-ESO-1.
XX
KW EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;
KW CD4+ T lymphocyte; tumour associated gene; vaccine.
XX
OS Homo sapiens.
XX
PN WO200050589-A1.
XX
PD 31-AUG-2000.
XX
PF 18-FEB-2000; 2000WO-US004326.
XX
PR 22-FEB-1999; 99US-0121170P.
PR 08-OCT-1999; 99US-0158566P.

XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Chiari R, Coulie P, Boon-Falleur T;
XX
DR WPI; 2000-572089/53.
XX
PT Novel tyrosine kinase receptor, EphA3 human leukocyte antigen (HLA) class
PT II binding peptide and nucleic acid encoding the receptor, useful for
PT diagnosing and treating conditions characterized by expression of EphA3
PT gene.
XX
PS Disclosure; Page 36; 107pp; English.
XX
CC AAB08668-B08704 represent antigenic peptides characteristic of tumours.
CC The peptides may be combined in vaccines with a human EphA3 HLA (human
CC leukocyte antigen) class II-binding peptide. EphA3 antigens, when
CC presented by an antigen presenting cell having a HLA class II molecule,
CC effectively induce activation and proliferation of CD4+ T lymphocytes.
CC EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used
CC for selectively enriching a population of T lymphocytes. The peptides are
CC also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA
CC binding peptide expression. The peptides are also used to treat a
CC disorder characterized by EphA3 expression. The EphA3 binding peptides
CC are useful in producing vaccines and antibody
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB08703 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 340
AAB08704
ID AAB08704 standard; peptide; 9 AA.
XX
AC AAB08704;
XX
DT 02-JAN-2001 (first entry)
XX
DE Antigenic peptide from tumour rejection antigen NY-ESO-1.
XX
KW EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;
KW CD4+ T lymphocyte; tumour associated gene; vaccine.
XX
OS Homo sapiens.
XX
PN WO200050589-A1.
XX
PD 31-AUG-2000.
XX
PF 18-FEB-2000; 2000WO-US004326.
XX
PR 22-FEB-1999; 99US-0121170P.
PR 08-OCT-1999; 99US-0158566P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Chiari R, Coulie P, Boon-Falleur T;
XX
DR WPI; 2000-572089/53.
XX
PT Novel tyrosine kinase receptor, EphA3 human leukocyte antigen (HLA) class
PT II binding peptide and nucleic acid encoding the receptor, useful for
PT diagnosing and treating conditions characterized by expression of EphA3
PT gene.
XX
PS Disclosure; Page 36; 107pp; English.
XX
CC AAB08668-B08704 represent antigenic peptides characteristic of tumours.
CC The peptides may be combined in vaccines with a human EphA3 HLA (human
CC leukocyte antigen) class II-binding peptide. EphA3 antigens, when
CC presented by an antigen presenting cell having a HLA class II molecule,
CC effectively induce activation and proliferation of CD4+ T lymphocytes.
CC EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used
CC for selectively enriching a population of T lymphocytes. The peptides are
CC also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA
CC binding peptide expression. The peptides are also used to treat a
CC disorder characterized by EphA3 expression. The EphA3 binding peptides
CC are useful in producing vaccines and antibody
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB08704 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 341
AAM99363
ID AAM99363 standard; peptide; 9 AA.
XX
AC AAM99363;
XX
DT 07-DEC-2001 (first entry)
XX
DE Vaccine related MHC ligand peptide SEQ ID NO:466.
XX
KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;
KW human immunodeficiency virus.
XX
OS Homo sapiens.
XX
PN WO200170772-A2.
XX
PD 27-SEP-2001.
XX
PF 22-MAR-2001; 2001WO-FR000872.
XX
PR 23-MAR-2000; 2000FR-00003711.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;
XX
DR WPI; 2001-611470/70.
XX
PT Stabilized pharmaceutical containing N-terminal glutamic acid or
PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
PT with strong acid.
XX
PS Claim 9; Page 111; 149pp; French.

XX
CC The present invention describes a pharmaceutical compound (I) that
CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
CC the form of an addition salt with a strong, physiologically acceptable
CC acid (II). Also described are: (a) a pharmaceutical composition
CC containing at least one (I); (b) a vaccine containing at least one (I)
CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
CC method for in vitro diagnosis of diseases associated with the presence of
CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
CC for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
CC cytostatic activities. (I) are useful, in human or veterinary medicine,
CC in pharmaceutical compositions (for treating immune disorders, e.g.
CC immune deficiency, autoimmune states, hypersensitivity, allergy, graft
CC rejection, infection, hormonal disorders and central nervous system
CC diseases), also, where (I) is a MHC ligand (Ia), in vaccines for
CC treatment or prevention of: (i) viral, bacterial, parasitic or fungal
CC infections; or (ii) of cancers. A particular application is in anti-
CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
CC associated with interactions between MHC and (I), e.g. melanoma and human
CC immunodeficiency virus infection. AAM98898 to AAM99592 represent peptides
CC which can be used in pharmaceutical compounds from the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAM99363 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 342
AAE02120
ID AAE02120 standard; peptide; 9 AA.
XX
AC AAE02120;
XX
DT 31-JUL-2001 (first entry)
XX
DE NY-ESO-1 human leukocyte antigen-A2-binding peptide #2.
XX
KW Human; cytostatic; immunogen; NY-ESO-1; human leukocyte antigen; HLA;
KW CD8; cytotoxic T lymphocyte; cancer; carcinoma; melanoma; myeloma;
KW brain tumour; sarcoma; vaccine; gene therapy.
XX
OS Homo sapiens.
XX
PN WO200129220-A2.
XX
PD 26-APR-2001.
XX
PF 19-OCT-2000; 2000WO-US028852.
XX
PR 19-OCT-1999; 99US-0160374P.
PR 01-FEB-2000; 2000US-0179570P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Heidecker L, Van Den Eynde B, Boon-Falleur T, Brasseur F;
XX
DR WPI; 2001-328498/34.
XX
PT New antigenic peptides derived from MAGE-A12 polypeptides, useful for
PT diagnosis and treatment of cancer, such as bladder, lung, breast, brain,
PT prostate and renal carcinomas.
XX
PS Disclosure; Page 21; 69pp; English.
XX
CC The patent discloses antigenic peptides derived from MAGE-A12 protein and
CC presented by human leukocyte antigens (HLAs). These antigenic peptides
CC when presented by an antigen presenting cell having a HLA class I
CC molecule, effectively induce the activation and proliferation of CD8+
CC cytotoxic T lymphocytes (CTLs). MAGE-A12 is useful for treating a subject
CC having a disorder characterised by expression of MAGE-A12. The protein
CC microarray comprising MAGE-A12 is useful for diagnosing a disorder,
CC especially cancer, by determining the binding of an antibody, T
CC lymphocytes or a HLA molecule isolated from the subject suspected of
CC having the disorder characterised by the expression of MAGE-A12. MAGE-A12
CC is useful for treating cancers, including bladder carcinomas, melanomas,
CC oesophageal, lung, head and neck, breast, colorectal carcinomas,
CC myelomas, brain tumours, sarcomas, prostate and renal carcinomas and to
CC produce antibodies. MAGE-A12 antibodies are useful for diagnosing
CC disorders characterised by expression of MAGE-A12 immunogenic
CC polypeptide. These MAGE-A12 peptides are used as vaccines. They are also
CC used in gene therapy. The present sequence is an antigenic peptide
CC derived from NY-ESO-1. This peptide which is characteristic of tumours is
CC presented by HLA-A2 MHC (major histocompatibility complex) and is
CC recognised by CTLs
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE02120 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 343
AAE02121
ID AAE02121 standard; peptide; 9 AA.
XX
AC AAE02121;
XX
DT 31-JUL-2001 (first entry)
XX
DE NY-ESO-1 human leukocyte antigen-A2-binding peptide #3.
XX
KW Human; cytostatic; immunogen; NY-ESO-1; human leukocyte antigen; HLA;
KW CD8; cytotoxic T lymphocyte; cancer; carcinoma; melanoma; myeloma;
KW brain tumour; sarcoma; vaccine; gene therapy.
XX
OS Homo sapiens.
XX
PN WO200129220-A2.
XX
PD 26-APR-2001.
XX
PF 19-OCT-2000; 2000WO-US028852.
XX
PR 19-OCT-1999; 99US-0160374P.
PR 01-FEB-2000; 2000US-0179570P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Heidecker L, Van Den Eynde B, Boon-Falleur T, Brasseur F;
XX
DR WPI; 2001-328498/34.
XX
PT New antigenic peptides derived from MAGE-A12 polypeptides, useful for
PT diagnosis and treatment of cancer, such as bladder, lung, breast, brain,

PT prostate and renal carcinomas.
XX
PS Disclosure; Page 21; 69pp; English.
XX
CC The patent discloses antigenic peptides derived from MAGE-A12 protein and
CC presented by human leukocyte antigens (HLAs). These antigenic peptides
CC when presented by an antigen presenting cell having a HLA class I
CC molecule, effectively induce the activation and proliferation of CD8+
CC cytotoxic T lymphocytes (CTLs). MAGE-A12 is useful for treating a subject
CC having a disorder characterised by expression of MAGE-A12. The protein
CC microarray comprising MAGE-A12 is useful for diagnosing a disorder,
CC especially cancer, by determining the binding of an antibody, T
CC lymphocytes or a HLA molecule isolated from the subject suspected of
CC having the disorder characterised by the expression of MAGE-A12. MAGE-A12
CC is useful for treating cancers, including bladder carcinomas, melanomas,
CC oesophageal, lung, head and neck, breast, colorectal carcinomas,
CC myelomas, brain tumours, sarcomas, prostate and renal carcinomas and to
CC produce antibodies. MAGE-A12 antibodies are useful for diagnosing
CC disorders characterised by expression of MAGE-A12 immunogenic
CC polypeptide. These MAGE-A12 peptides are used as vaccines. They are also
CC used in gene therapy. The present sequence is an antigenic peptide
CC derived from NY-ESO-1. This peptide which is characteristic of tumours is
CC presented by HLA-A2 MHC (major histocompatibility complex) and is
CC recognised by CTLs
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE02121 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 344
AAB69910
ID AAB69910 standard; peptide; 9 AA.
XX
AC AAB69910;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #10.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69910 (1-9)

```
Qy        339 TTCGCGACACCCATGGAAGCAGAGCTG 365
              |||||||||||||||||||||||||||
Db          1 PheAlaThrProMetGluAlaGluLeu 9
```

RESULT 345
AAB69911
ID AAB69911 standard; peptide; 9 AA.
XX
AC AAB69911;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #11.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.

XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69911 (1-9)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              |||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9
```

RESULT 346
AAB69914
ID AAB69914 standard; peptide; 9 AA.
XX
AC AAB69914;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #14.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69914 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 347
AAB69907
ID AAB69907 standard; peptide; 9 AA.
XX
AC AAB69907;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #7.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma

```
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAB69907 (1-9)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCG 257
              |||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAla 9

RESULT 348
AAB69915
ID   AAB69915 standard; peptide; 9 AA.
XX
AC   AAB69915;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #15.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAB69915 (1-9)

Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 349
AAB69922
ID   AAB69922 standard; peptide; 9 AA.
XX
AC   AAB69922;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #22.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816             Length:         9
Score:                  9.00            Matches:        9
Percent Similarity:     100.00%         Conservative:   0
Best Local Similarity:  100.00%         Mismatches:     0
Query Match:            5.00%           Indels:         0
DB:                     1               Gaps:           0

US-10-023-182-1 (1-752) x AAB69922 (1-9)
```

```
Qy        381 GCCCAGGATGCCCCACCGCTTCCCGTG 407
              ||||||||||||||||||||||||||||
Db          1 AlaGlnAspAlaProProLeuProVal 9

RESULT 350
AAB69949
ID   AAB69949 standard; peptide; 9 AA.
XX
AC   AAB69949;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 CTL stimulating peptide #3.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 13; Page 24; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:         9
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69949 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 351
AAB69909
ID   AAB69909 standard; peptide; 9 AA.
XX
AC   AAB69909;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #9.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:         9
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x AAB69909 (1-9)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTG 416
              ||||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyVal 9

RESULT 352
AAB69919
ID   AAB69919 standard; peptide; 9 AA.
XX
AC   AAB69919;
XX
DT   27-APR-2001  (first entry)
```

XX
DE Human NY-ESO-1 HLA binding motif #19.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69919 (1-9)

```
Qy        357 GCAGAGCTGGCCCGCAGGAGCCTGGCC 383
              |||||||||||||||||||||||||||
Db          1 AlaGluLeuAlaArgArgSerLeuAla 9
```

RESULT 353
AAB69901
ID AAB69901 standard; peptide; 9 AA.
XX
AC AAB69901;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #1.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 24; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69901 (1-9)

```
Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTC 323
              |||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPhe 9
```

RESULT 354
AAB69918
ID AAB69918 standard; peptide; 9 AA.
XX
AC AAB69918;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #18.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.

XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69918 (1-9)

```
Qy        300 CCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              |||||||||||||||||||||||||
Db          1 ProGluSerArgLeuLeuGluPheTyr 9
```

RESULT 355
AAB69923
ID AAB69923 standard; peptide; 9 AA.
XX
AC AAB69923;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #23.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69923 (1-9)

```
Qy        486 CTGCAGCTCTCCATCAGCTCCTGTCTC 512
              |||||||||||||||||||||||||||
Db          1 LeuGlnLeuSerIleSerSerCysLeu 9
```

RESULT 356
AAB69912
ID AAB69912 standard; peptide; 9 AA.
XX
AC AAB69912;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #12.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.

XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69912 (1-9)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9
```

RESULT 357
AAB69913
ID AAB69913 standard; peptide; 9 AA.
XX
AC AAB69913;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #13.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69913 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 358
AAB69920
ID AAB69920 standard; peptide; 9 AA.
XX
AC AAB69920;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #20.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-

CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69920 (1-9)

```
Qy        351 ATGGAAGCAGAGCTGGCCCGCAGGAGC 377
              |||||||||||||||||||||||||||
Db          1 MetGluAlaGluLeuAlaArgArgSer 9
```

RESULT 359
AAB69908
ID AAB69908 standard; peptide; 9 AA.
XX
AC AAB69908;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #8.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69908 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 360
AAB69917
ID AAB69917 standard; peptide; 9 AA.
XX
AC AAB69917;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #17.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9

```
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69917 (1-9)

Qy        315 CTTGAGTTCTACCTCGCCATGCCTTTC 341
              |||||||||||||||||||||||||||
Db          1 LeuGluPheTyrLeuAlaMetProPhe 9

RESULT 361
AAB69924
ID   AAB69924 standard; peptide; 9 AA.
XX
AC   AAB69924;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #24.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 25; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69924 (1-9)

Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTT 563
              |||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPhe 9

RESULT 362
AAB69902
ID   AAB69902 standard; peptide; 9 AA.
XX
AC   AAB69902;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #2.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 24; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69902 (1-9)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTT 551
              |||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPhe 9
```

```
RESULT 363
AAB69903
ID   AAB69903 standard; peptide; 9 AA.
XX
AC   AAB69903;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #3.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 14; Page 24; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69903 (1-9)

Qy        528 TTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||
Db          1 LeuMetTrpIleThrGlnCysPheLeu 9

RESULT 364
AAB69948
ID   AAB69948 standard; peptide; 9 AA.
XX
AC   AAB69948;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 CTL stimulating peptide #2.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW   non-small cell lung carcinoma; tumour status determination.
XX
OS   Homo sapiens.
XX
PN   WO200107917-A1.
XX
PD   01-FEB-2001.
XX
PF   14-JUL-2000; 2000WO-US019220.
XX
PR   23-JUL-1999;   99US-00359503.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (SLOK ) SLOAN KETTERING INST CANCER RES.
PA   (CORR ) CORNELL RES FOUND INC.
XX
PI   Jager E,  Stockert E,  Old LJ,  Knuth A,  Chen Y,  Scanlan M;
XX
DR   WPI; 2001-182822/18.
XX
PT   Method useful for determining the status (e.g. progression, regression or
PT   stability of the disease) of a cancerous condition, involves determining
PT   the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT   patient.
XX
PS   Example 13; Page 24; 50pp; English.
XX
CC   The present sequence is given in a specification relating to a method for
CC   determining the status of a cancerous condition in a patient with a
CC   tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC   taken from the patient for antibodies that specifically bind to the NY-
CC   ESO-1 and comparing the value obtained to a prior value obtained from
CC   assay of a prior sample taken from the patient. Any difference between
CC   the values is indicative of a change in status of the cancerous
CC   condition. The method is useful for determining whether a cancerous
CC   condition is progressing, regressing or remaining stable, in particular
CC   in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC   cell lung carcinoma or bladder carcinoma
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB69948 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 365
AAB69906
ID   AAB69906 standard; peptide; 9 AA.
XX
AC   AAB69906;
XX
DT   27-APR-2001  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #6.
XX
KW   Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW   HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
```

KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69906 (1-9)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9
```

RESULT 366
AAB69916
ID AAB69916 standard; peptide; 9 AA.
XX
AC AAB69916;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #16.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69916 (1-9)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9
```

RESULT 367
AAB69921
ID AAB69921 standard; peptide; 9 AA.
XX
AC AAB69921;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #21.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX

PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB69921 (1-9)

```
Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATC 539
              |||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIle 9
```

RESULT 368
AAG67180
ID AAG67180 standard; peptide; 9 AA.
XX
AC AAG67180;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67180 (1-9)

```
Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9
```

RESULT 369
AAG67169
ID AAG67169 standard; peptide; 9 AA.
XX
AC AAG67169;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours

```
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67169 (1-9)

Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTC 323
              |||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPhe 9

RESULT 370
AAG67181
ID   AAG67181 standard; peptide; 9 AA.
XX
AC   AAG67181;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67181 (1-9)

Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 371
AAG67190
ID   AAG67190 standard; peptide; 9 AA.
XX
AC   AAG67190;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67190 (1-9)

Qy        381 GCCCAGGATGCCCCACCGCTTCCCGTG 407
              |||||||||||||||||||||||||||
Db          1 AlaGlnAspAlaProProLeuProVal 9

RESULT 372
AAG67176
ID   AAG67176 standard; peptide; 9 AA.
XX
AC   AAG67176;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
```

XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67176 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 373
AAG67166
ID AAG67166 standard; peptide; 9 AA.
XX
AC AAG67166;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 12; Page 24; 50pp; English.
XX
CC The present sequence represents a peptide which is derived from cancer
CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide
CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is
CC processed to at least one human leukocyte antigen (HLA) binding peptide,
CC which binds to Class I and Class II major histocompatibility complex
CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal
CC colon, kidney, liver or brain tissue. The presence or level of expression
CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis
CC tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67166 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 374
AAG67186
ID AAG67186 standard; peptide; 9 AA.
XX
AC AAG67186;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.

```
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67186 (1-9)

Qy        300 CCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              |||||||||||||||||||||||||||
Db          1 ProGluSerArgLeuLeuGluPheTyr 9

RESULT 375
AAG67189
ID   AAG67189 standard; peptide; 9 AA.
XX
AC   AAG67189;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67189 (1-9)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATC 539
              |||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 376
AAG67188
ID   AAG67188 standard; peptide; 9 AA.
XX
AC   AAG67188;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67188 (1-9)

Qy        351 ATGGAAGCAGAGCTGGCCCGCAGGAGC 377
              |||||||||||||||||||||||||||
Db          1 MetGluAlaGluLeuAlaArgArgSer 9
```

```
RESULT 377
AAG67179
ID   AAG67179 standard; peptide; 9 AA.
XX
AC   AAG67179;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67179 (1-9)

Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              |||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9

RESULT 378
AAG67183
ID   AAG67183 standard; peptide; 9 AA.
XX
AC   AAG67183;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67183 (1-9)

Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 379
AAG67191
ID   AAG67191 standard; peptide; 9 AA.
XX
AC   AAG67191;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
```

PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67191 (1-9)

```
Qy        486 CTGCAGCTCTCCATCAGCTCCTGTCTC 512
              |||||||||||||||||||||||||||
Db          1 LeuGlnLeuSerIleSerSerCysLeu 9
```

RESULT 380
AAG67167
ID AAG67167 standard; peptide; 9 AA.
XX
AC AAG67167;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 12; Page 24; 50pp; English.
XX
CC The present sequence represents a peptide which is derived from cancer
CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide
CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is
CC processed to at least one human leukocyte antigen (HLA) binding peptide,
CC which binds to Class I and Class II major histocompatibility complex
CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal
CC colon, kidney, liver or brain tissue. The presence or level of expression
CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis
CC tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67167 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 381
AAG67185
ID AAG67185 standard; peptide; 9 AA.
XX
AC AAG67185;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0

```
Query Match:            5.00%       Indels:        0
DB:                     1           Gaps:          0

US-10-023-182-1 (1-752) x AAG67185 (1-9)

Qy        315 CTTGAGTTCTACCTCGCCATGCCTTTC 341
              |||||||||||||||||||||||||||
Db          1 LeuGluPheTyrLeuAlaMetProPhe 9

RESULT 382
AAG67178
ID   AAG67178 standard; peptide; 9 AA.
XX
AC   AAG67178;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816         Length:        9
Score:                  9.00        Matches:       9
Percent Similarity:     100.00%     Conservative:  0
Best Local Similarity:  100.00%     Mismatches:    0
Query Match:            5.00%       Indels:        0
DB:                     1           Gaps:          0

US-10-023-182-1 (1-752) x AAG67178 (1-9)

Qy        339 TTCGCGACACCCATGGAAGCAGAGCTG 365
              |||||||||||||||||||||||||||
Db          1 PheAlaThrProMetGluAlaGluLeu 9

RESULT 383
AAG67171
ID   AAG67171 standard; peptide; 9 AA.
XX
AC   AAG67171;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816         Length:        9
Score:                  9.00        Matches:       9
Percent Similarity:     100.00%     Conservative:  0
Best Local Similarity:  100.00%     Mismatches:    0
Query Match:            5.00%       Indels:        0
DB:                     1           Gaps:          0

US-10-023-182-1 (1-752) x AAG67171 (1-9)

Qy        528 TTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||
Db          1 LeuMetTrpIleThrGlnCysPheLeu 9

RESULT 384
AAG67175
ID   AAG67175 standard; peptide; 9 AA.
XX
AC   AAG67175;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
```

```
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816           Length:        9
Score:                   9.00          Matches:       9
Percent Similarity:      100.00%       Conservative:  0
Best Local Similarity:   100.00%       Mismatches:    0
Query Match:             5.00%         Indels:        0
DB:                      1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67175 (1-9)

Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCG 257
              |||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAla 9

RESULT 385
AAG67177
ID   AAG67177 standard; peptide; 9 AA.
XX
AC   AAG67177;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:               816           Length:        9
Score:                   9.00          Matches:       9
Percent Similarity:      100.00%       Conservative:  0
Best Local Similarity:   100.00%       Mismatches:    0
Query Match:             5.00%         Indels:        0
DB:                      1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67177 (1-9)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTG 416
              |||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyVal 9

RESULT 386
AAG67170
ID   AAG67170 standard; peptide; 9 AA.
XX
AC   AAG67170;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
```

```
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67170 (1-9)

Qy        525 CTGTTGATGTGGATCACGCAGTGCTTT 551
              |||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPhe 9

RESULT 387
AAG67174
ID   AAG67174 standard; peptide; 9 AA.
XX
AC   AAG67174;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67174 (1-9)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 388
AAG67184
ID   AAG67184 standard; peptide; 9 AA.
XX
AC   AAG67184;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW   Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW   HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW   cancer; testis tumour.
XX
OS   Homo sapiens.
XX
PN   WO200162917-A1.
XX
PD   30-AUG-2001.
XX
PF   22-JAN-2001; 2001WO-US002126.
XX
PR   22-FEB-2000; 2000US-00510635.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Lethe B,  Boon-Falleur T;
XX
DR   WPI; 2001-550091/61.
XX
PT   Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT   for diagnosing testicular tumors.
XX
PS   Example 13; Page 26; 50pp; English.
XX
CC   AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC   tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC   leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC   least one human leukocyte antigen (HLA) binding peptide, which binds to
CC   Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC   expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC   liver or brain tissue. The presence or level of expression of NY-ESO-1
CC   may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAG67184 (1-9)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 389
AAG67187
ID   AAG67187 standard; peptide; 9 AA.
XX
AC   AAG67187;
XX
DT   13-NOV-2001  (first entry)
XX
DE   Cancer testis tumour antigen NY-ESO-1 derived peptide.
```

XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67187 (1-9)

```
Qy        357 GCAGAGCTGGCCCGCAGGAGCCTGGCC 383
              |||||||||||||||||||||||||||
Db          1 AlaGluLeuAlaArgArgSerLeuAla 9
```

RESULT 390
AAG67182
ID AAG67182 standard; peptide; 9 AA.
XX
AC AAG67182;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67182 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 391
AAG67192
ID AAG67192 standard; peptide; 9 AA.
XX
AC AAG67192;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI; 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX

CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAG67192 (1-9)

```
Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTT 563
              |||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPhe 9
```

RESULT 392
AAU01546
ID AAU01546 standard; peptide; 9 AA.
XX
AC AAU01546;
XX
DT 18-JUL-2001 (first entry)
XX
DE Human NY-ESO-1 tumour rejection antigen precursor peptide #2.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 21; Page 31; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,
CC bind to major histocompatibility complex (MHC) Class II molecules such as
CC human leukocyte antigen-determining region (HLA-DR) molecules and
CC stimulate proliferation of helper T cells. The peptides can be
CC administered to an HLA-DR positive subject in order to stimulate the
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed
CC on the surface of a cell or present in free form is useful for this
CC stimulation. The nucleic acid is useful for screening for a cancerous
CC condition, which involves contacting a subject sample to a cell line
CC transfected with the immunoreactive cell (helper T cell), where
CC interaction is indicative of cancer. In addition, a sample from a patient
CC (for example, a body fluid or tissue) can be monitored for the amount of
CC the complex present in the bloodstream. This is useful for determining
CC regression, progression or onset of a cancerous condition. The method
CC involves contacting the sample with a radioactive labelled or enzyme
CC labelled monoclonal antibody which specifically binds with the complex
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01546 (1-9)

```
Qy        375 AGCCTGGCCCAGGATGCCCCACCGCTT 401
              |||||||||||||||||||||||||||
Db          1 SerLeuAlaGlnAspAlaProProLeu 9
```

RESULT 393
AAU01545
ID AAU01545 standard; peptide; 9 AA.
XX
AC AAU01545;
XX
DT 18-JUL-2001 (first entry)
XX
DE Human NY-ESO-1 tumour rejection antigen precursor peptide #1.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 21; Page 31; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,
CC bind to major histocompatibility complex (MHC) Class II molecules such as
CC human leukocyte antigen-determining region (HLA-DR) molecules and
CC stimulate proliferation of helper T cells. The peptides can be
CC administered to an HLA-DR positive subject in order to stimulate the
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed
CC on the surface of a cell or present in free form is useful for this
CC stimulation. The nucleic acid is useful for screening for a cancerous

CC condition, which involves contacting a subject sample to a cell line
CC transfected with the immunoreactive cell (helper T cell), where
CC interaction is indicative of cancer. In addition, a sample from a patient
CC (for example, a body fluid or tissue) can be monitored for the amount of
CC the complex present in the bloodstream. This is useful for determining
CC regression, progression or onset of a cancerous condition. The method
CC involves contacting the sample with a radioactive labelled or enzyme
CC labelled monoclonal antibody which specifically binds with the complex
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01545 (1-9)

```
Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATG 335
              |||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMet 9
```

RESULT 394
AAU01537
ID AAU01537 standard; peptide; 9 AA.
XX
AC AAU01537;
XX
DT 18-JUL-2001 (first entry)
XX
DE Cytolytic T cell line stimulator peptide #2.
XX
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;
KW human leukocyte antigen-determining region; disease progression;
KW disease regression; disease onset; body tissue; body fluid; enzyme label;
KW radioactive label; monoclonal antibody; cytolytic T cell line.
XX
OS Homo sapiens.
XX
PN WO200123560-A2.
XX
PD 05-APR-2001.
XX
PF 26-SEP-2000; 2000WO-US026411.
XX
PR 29-SEP-1999; 99US-00408036.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Tureci O, Sahin U, Pfreundschuh M;
XX
DR WPI; 2001-266156/27.
XX
PT Polypeptides binding to major histocompatibility complex class II human
PT leukocyte antigen-determining region molecule having amino acid sequence
PT found in tumor rejection antigen precursor used for stimulating
PT proliferation of helper T cells.
XX
PS Example 12; Page 17; 62pp; English.
XX
CC The sequence represents a human NY-ESO-1 tumour rejection antigen
CC precursor fragment which efficiently stimulates cytolytic T cell lines.
CC NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major
CC histocompatibility complex (MHC) Class II molecules such as human
CC leukocyte antigen-determining region (HLA-DR) molecules and stimulate
CC proliferation of helper T cells. The peptides can be administered to an
CC HLA-DR positive subject in order to stimulate the helper T cells. An MHC
CC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell
CC or present in free form is useful for this stimulation. The nucleic acid
CC is useful for screening for a cancerous condition, which involves
CC contacting a subject sample to a cell line transfected with the
CC immunoreactive cell (helper T cell), where interaction is indicative of
CC cancer. In addition, a sample from a patient (for example, a body fluid
CC or tissue) can be monitored for the amount of the complex present in the
CC bloodstream. This is useful for determining regression, progression or
CC onset of a cancerous condition. The method involves contacting the sample
CC with a radioactive labelled or enzyme labelled monoclonal antibody which
CC specifically binds with the complex
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAU01537 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 395
AAB31330
ID AAB31330 standard; peptide; 9 AA.
XX
AC AAB31330;
XX
DT 20-APR-2001 (first entry)
XX
DE Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS Homo sapiens.
XX
PN WO200078806-A1.
XX
PD 28-DEC-2000.
XX
PF 14-JUN-2000; 2000WO-US016287.
XX
PR 18-JUN-1999; 99US-00336091.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Van Snick J, Lethe B, Chaux P, Boon-Falleur T, Van Der Bruggen P;
XX
DR WPI; 2001-102698/11.
XX
PT Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT are presented to the class II molecules, useful for inducing immune
PT response and treating cancers characterized by expression of MAGE-A1.
XX
PS Disclosure; Page 32; 78pp; English.
XX
CC AAB31302-59 represent exemplary antigens which are characteristic of
CC tumours. They can be used to enhance the immune response of vaccines
CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC binding protein stimulate the activity and proliferation of CD4+ T
CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC The protein is used for treating a disorder characterized by expression
CC of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC derived from the MAGE-A1 HLA binding protein are useful in the production
CC of anti-tumour vaccines

XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB31330 (1-9)

Qy 516 CAGCTTTCCCTGTTGATGTGGATCACG 542
||||||||||||||||||||||||||
Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 396
AAB31329
ID AAB31329 standard; peptide; 9 AA.
XX
AC AAB31329;
XX
DT 20-APR-2001 (first entry)
XX
DE Exemplary antigen characteristic of tumours and derived from NY-ESO-1.
XX
KW MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;
KW MAGE-A1 HLA class II-binding protein; vaccine.
XX
OS Homo sapiens.
XX
PN WO200078806-A1.
XX
PD 28-DEC-2000.
XX
PF 14-JUN-2000; 2000WO-US016287.
XX
PR 18-JUN-1999; 99US-00336091.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Van Snick J, Lethe B, Chaux P, Boon-Falleur T, Van Der Bruggen P;
XX
DR WPI; 2001-102698/11.
XX
PT Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and
PT are presented to the class II molecules, useful for inducing immune
PT response and treating cancers characterized by expression of MAGE-A1.
XX
PS Disclosure; Page 32; 78pp; English.
XX
CC AAB31302-59 represent exemplary antigens which are characteristic of
CC tumours. They can be used to enhance the immune response of vaccines
CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte
CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA
CC binding protein stimulate the activity and proliferation of CD4+ T
CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic
CC agent for diagnosing a disorder characterized by expression of MAGE-A1.
CC The protein is used for treating a disorder characterized by expression
CC of MAGE-A1 such as cancers e.g. melanomal, squamous cell carcinomas,
CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides
CC derived from the MAGE-A1 HLA binding protein are useful in the production
CC of anti-tumour vaccines
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB31329 (1-9)

Qy 522 TCCCTGTTGATGTGGATCACGCAGTGC 548
||||||||||||||||||||||||||
Db 1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 397
AAB85299
ID AAB85299 standard; peptide; 9 AA.
XX
AC AAB85299;
XX
DT 17-SEP-2001 (first entry)
XX
DE HLA-A2 binding NY-ESO-1 peptide #2.
XX
KW NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;
KW HLA-A2; T-cell sorter; tumor; immune tetramer.
XX
OS Homo sapiens.
XX
PN WO200136453-A2.
XX
PD 25-MAY-2001.
XX
PF 08-NOV-2000; 2000WO-US042010.
XX
PR 15-NOV-1999; 99US-00440621.
PR 25-FEB-2000; 2000US-00514036.
PR 29-SEP-2000; 2000US-00676005.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYOX-) UNIV OXFORD.
XX
PI Valmori D, Cerottini J, Romero P, Cerundolo V;
XX
DR WPI; 2001-451454/48.
XX
PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell
PT presents human leukocyte antigen-A2 molecule on its surface, binds to
PT human leukocyte antigen molecules and provokes lysis by cytolytic T
PT cells.
XX
PS Example 1; Page 4; 38pp; English.
XX
CC The invention provides NY-ESO-1 peptide derivatives which bind to human
CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells
CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLLMWITQX, where X is an
CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide
CC derivatives are useful for determining if a cell presents an HLA-A2
CC molecule on its surface, by contacting a sample containing the cell with
CC the peptide or its derivative, and determining binding between them,
CC where the binding is indicative of HLA-A2 on the surface of the cell. The
CC NY-ESO-1 peptides and analogues are useful therapeutically, for
CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1
CC in connection with the pathology, as well as diagnostically, i.e. to
CC determine if HLA-A2 positive cells are present, or if relevant CTLs are
CC present. They are also useful for determining the presence of CTLs in a
CC sample. The peptides are useful as T-cell sorters, when incorporated into
CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that
CC can bind to HLA-A2 molecule
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB85299 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 398
AAB85300
ID AAB85300 standard; peptide; 9 AA.
XX
AC AAB85300;
XX
DT 17-SEP-2001 (first entry)
XX
DE HLA-A2 binding NY-ESO-1 peptide #3.
XX
KW NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;
KW HLA-A2; T-cell sorter; tumor; immune tetramer.
XX
OS Homo sapiens.
XX
PN WO200136453-A2.
XX
PD 25-MAY-2001.
XX
PF 08-NOV-2000; 2000WO-US042010.
XX
PR 15-NOV-1999; 99US-00440621.
PR 25-FEB-2000; 2000US-00514036.
PR 29-SEP-2000; 2000US-00676005.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYOX-) UNIV OXFORD.
XX
PI Valmori D, Cerottini J, Romero P, Cerundolo V;
XX
DR WPI; 2001-451454/48.
XX
PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell
PT presents human leukocyte antigen-A2 molecule on its surface, binds to
PT human leukocyte antigen molecules and provokes lysis by cytolytic T
PT cells.
XX
PS Example 1; Page 4; 38pp; English.
XX
CC The invention provides NY-ESO-1 peptide derivatives which bind to human
CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells
CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLLMWITQX, where X is an
CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide
CC derivatives are useful for determining if a cell presents an HLA-A2
CC molecule on its surface, by contacting a sample containing the cell with
CC the peptide or its derivative, and determining binding between them,
CC where the binding is indicative of HLA-A2 on the surface of the cell. The
CC NY-ESO-1 peptides and analogues are useful therapeutically, for
CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1
CC in connection with the pathology, as well as diagnostically, i.e. to
CC determine if HLA-A2 positive cells are present, or if relevant CTLs are
CC present. They are also useful for determining the presence of CTLs in a
CC sample. The peptides are useful as T-cell sorters, when incorporated into
CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that
CC can bind to HLA-A2 molecule
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB85300 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 399
AAB82017
ID AAB82017 standard; peptide; 9 AA.
XX
AC AAB82017;
XX
DT 12-JUN-2001 (first entry)
XX
DE HLA- binding peptide derived from NY-ESO-1.
XX
KW Multiple myeloma; tumour rejection antigen precursor; MAGE; BAGE; GAGE;
KW LAGE; NY-ESO-1; PRAME; DAGE; human; HLA.
XX
OS Homo sapiens.
XX
PN US6210886-B1.
XX
PD 03-APR-2001.
XX
PF 30-OCT-1998; 98US-00183931.
XX
PR 04-FEB-1998; 98US-00018422.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Van Baren N, Brasseur F, Boon-Falleur T;
XX
DR WPI; 2001-289628/30.
XX
PT Detecting multiple myeloma in a patient, comprises contacting a nucleic
PT acid containing sample taken from bone marrow or blood with a
PT hybridization probe specific for a tumor rejection antigen precursor.
XX
PS Example 3; Col 11; 16pp; English.
XX
CC The present invention relates to a method for detecting multiple myeloma.
CC The method comprises contacting a nucleic acid containing a sample taken
CC from a bone marrow or blood of a patient, with a hybridisation probe
CC specific for a tumour rejection antigen precursor. Tumour rejection
CC antigen precursors used in the present invention are the MAGE family,
CC BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGE).
CC Expression of the tumour rejection antigen precursor indicates possible
CC multiple myeloma in the patient. The method can also be used for
CC monitoring the disease progress and course of therapeutic regime. The
CC present sequence is a peptide derived from a tumour rejection antigen
CC precursor, which was used in the method of the present invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAB82017 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 400
AAB82018
ID AAB82018 standard; peptide; 9 AA.
XX

```
AC   AAB82018;
XX
DT   12-JUN-2001  (first entry)
XX
DE   HLA- binding peptide derived from NY-ESO-1.
XX
KW   Multiple myeloma; tumour rejection antigen precursor; MAGE; BAGE; GAGE;
KW   LAGE; NY-ESO-1; PRAME; DAGE; human; HLA.
XX
OS   Homo sapiens.
XX
PN   US6210886-B1.
XX
PD   03-APR-2001.
XX
PF   30-OCT-1998;   98US-00183931.
XX
PR   04-FEB-1998;   98US-00018422.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Van Baren N,  Brasseur F,  Boon-Falleur T;
XX
DR   WPI; 2001-289628/30.
XX
PT   Detecting multiple myeloma in a patient, comprises contacting a nucleic
PT   acid containing sample taken from bone marrow or blood with a
PT   hybridization probe specific for a tumor rejection antigen precursor.
XX
PS   Example 3; Col 11; 16pp; English.
XX
CC   The present invention relates to a method for detecting multiple myeloma.
CC   The method comprises contacting a nucleic acid containing a sample taken
CC   from a bone marrow or blood of a patient, with a hybridisation probe
CC   specific for a tumour rejection antigen precursor. Tumour rejection
CC   antigen precursors used in the present invention are the MAGE family,
CC   BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGE).
CC   Expression of the tumour rejection antigen precursor indicates possible
CC   multiple myeloma in the patient. The method can also be used for
CC   monitoring the disease progress and course of therapeutic regime. The
CC   present sequence is a peptide derived from a tumour rejection antigen
CC   precursor, which was used in the method of the present invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAB82018 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 401
AAE06850
ID   AAE06850 standard; peptide; 9 AA.
XX
AC   AAE06850;
XX
DT   16-OCT-2001  (first entry)
XX
DE   Human NY-ESO-1 antigenic peptide #2.
XX
KW   MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;
KW   tumour cell; immunostimulant; antigen presentation; cancer; melanoma;
KW   CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;
KW   myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;
KW   gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;
KW   major histocompatibility complex.
XX   ;
OS   Homo sapiens.
XX
PN   WO200153833-A1.
XX
PD   26-JUL-2001.
XX
PF   19-JAN-2001; 2001WO-US002008.
XX
PR   20-JAN-2000; 2000US-0177242P.
PR   25-OCT-2000; 2000US-0243212P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Luiten R,  Boon-Falleur T,  Van Der Bruggen P,  Stroobant V;
PI   Demotte N,  Schultz E;
XX
DR   WPI; 2001-488724/53.
XX
PT   Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44
PT   binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in
PT   diagnosis and treatment of a disorder characterized by expression of MAGE
PT   -A1 or -A3.
XX
PS   Disclosure; Page 28; 103pp; English.
XX
CC   The invention relates to functional variants and isolated mimetics of a
CC   MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or
CC   of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in
CC   the specification. MAGE genes encode tumour rejection antigens (TRAs)
CC   presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE
CC   antigenic peptide acts by binding to HLA molecules on tumour cells and
CC   stimulating recognition of these cells and thus signalling them to the
CC   immune system for destruction. The peptide when presented by HLA molecule
CC   induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.
CC   The MAGE antigenic peptide is used to treat and diagnose disorders
CC   characterised by expression of MAGE-A1 or -A3. Disorders include cancers
CC   e.g melanomas, oesophageal, lung, head and neck, breast, colorectal,
CC   prostate, renal, bladder, hepatocellular, papillary thyroid and gastric
CC   carcinomas, myelomas, brain tumours, sarcomas, seminomas, and ovarian
CC   tumours. The present sequence is human NY-ESO-1 tumour associated
CC   antigenic peptide presented by major histocompatibility complex (MHC) HLA
CC   -A2. The antigenic peptide is used in combination with peptides of the
CC   invention for inducing an immune response
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x AAE06850 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 402
AAE06851
ID   AAE06851 standard; peptide; 9 AA.
XX
AC   AAE06851;
XX
DT   16-OCT-2001  (first entry)
XX
DE   Human NY-ESO-1 antigenic peptide #3.
XX
```

KW MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;
KW tumour cell; immunostimulant; antigen presentation; cancer; melanoma;
KW CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;
KW myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;
KW gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;
KW major histocompatibility complex.
XX
OS Homo sapiens.
XX
PN WO200153833-A1.
XX
PD 26-JUL-2001.
XX
PF 19-JAN-2001; 2001WO-US002008.
XX
PR 20-JAN-2000; 2000US-0177242P.
PR 25-OCT-2000; 2000US-0243212P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Luiten R, Boon-Falleur T, Van Der Bruggen P, Stroobant V;
PI Demotte N, Schultz E;
XX
DR WPI; 2001-488724/53.
XX
PT Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44
PT binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in
PT diagnosis and treatment of a disorder characterized by expression of MAGE
PT -A1 or -A3.
XX
PS Disclosure; Page 28; 103pp; English.
XX
CC The invention relates to functional variants and isolated mimetics of a
CC MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or
CC of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in
CC the specification. MAGE genes encode tumour rejection antigens (TRAs)
CC presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE
CC antigenic peptide acts by binding to HLA molecules on tumour cells and
CC stimulating recognition of these cells and thus signalling them to the
CC immune system for destruction. The peptide when presented by HLA molecule
CC induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.
CC The MAGE antigenic peptide is used to treat and diagnose disorders
CC characterised by expression of MAGE-A1 or -A3. Disorders include cancers
CC e.g melanomas, oesophageal, lung, head and neck, breast, colorectal,
CC prostate, renal, bladder, hepatocellular, papillary thyroid and gastric
CC carcinomas, myelomas, brain tumours, sarcomas, seminomas, and ovarian
CC tumours. The present sequence is human NY-ESO-1 tumour associated
CC antigenic peptide presented by major histocompatibility complex (MHC) HLA
CC -A2. The antigenic peptide is used in combination with peptides of the
CC invention for inducing an immune response
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE06851 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 403
AAE26810
ID AAE26810 standard; peptide; 9 AA.
XX
AC AAE26810;
XX
DT 13-DEC-2002 (first entry)
XX
DE Human HLA-A2.1 restricted NY-ESO-1 peptide epitope #3.
XX
KW Human; cancer; breast cancer; ovarian cancer; melanoma; cell therapy;
KW epitope; human leucocyte antigen; HLA-A2.1.
XX
OS Homo sapiens.
XX
PN WO200265992-A2.
XX
PD 29-AUG-2002.
XX
PF 19-FEB-2002; 2002WO-US005748.
XX
PR 20-FEB-2001; 2001US-0270252P.
XX
PA (ORTH) ORTHO-MCNEIL PHARM INC.
XX
PI Degraw J, Moriarty A, Leturcq DJ, Jackson MR, Peterson PA;
PI Heiskala M;
XX
DR WPI; 2002-667033/71.
XX
PT Treating a subject with cancer comprises combining the CD+8 cells, which
PT are stimulated with non-naturally occurring antigen-presenting cell line,
PT with adherent blood monocytes and inoculating the subject with CD8+
PT suspension.
XX
PS Example 2; Page 95; 99pp; English.
XX
CC The invention relates to a method of treating a subject with cancer. The
CC method involves combining the CD+8 cells, which are stimulated with non
CC naturally occurring antigen-presenting cell (nnAPC) line, with adherent
CC blood monocytes and inoculating the subject with CD8+ suspension. The
CC method is useful for treating cancer e.g. ovarian cancer, breast cancer
CC and melanoma etc. It is also useful in cell therapy. The present sequence
CC is human leukocyte antigen A2 (HLA-A2).1 restricted peptide epitope used
CC to treat breast and ovarian cancer
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE26810 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 404
AAE26808
ID AAE26808 standard; peptide; 9 AA.
XX
AC AAE26808;
XX
DT 13-DEC-2002 (first entry)
XX
DE Human HLA-A2.1 restricted NY-ESO-1 peptide epitope #1.
XX
KW Human; cancer; breast cancer; ovarian cancer; melanoma; cell therapy;
KW epitope; human leucocyte antigen; HLA-A2.1.
XX
OS Homo sapiens.
XX
PN WO200265992-A2.
XX

PD 29-AUG-2002.
XX
PF 19-FEB-2002; 2002WO-US005748.
XX
PR 20-FEB-2001; 2001US-0270252P.
XX
PA (ORTH) ORTHO-MCNEIL PHARM INC.
XX
PI Degraw J, Moriarty A, Leturcq DJ, Jackson MR, Peterson PA;
PI Heiskala M;
XX
DR WPI; 2002-667033/71.
XX
PT Treating a subject with cancer comprises combining the CD+8 cells, which
PT are stimulated with non-naturally occurring antigen-presenting cell line,
PT with adherent blood monocytes and inoculating the subject with CD8+
PT suspension.
XX
PS Example 2; Page 94; 99pp; English.
XX
CC The invention relates to a method of treating a subject with cancer. The
CC method involves combining the CD+8 cells, which are stimulated with non
CC naturally occurring antigen-presenting cell (nnAPC) line, with adherent
CC blood monocytes and inoculating the subject with CD8+ suspension. The
CC method is useful for treating cancer e.g. ovarian cancer, breast cancer
CC and melanoma etc. It is also useful in cell therapy. The present sequence
CC is human leukocyte antigen A2 (HLA-A2).1 restricted peptide epitope used
CC to treat breast and ovarian cancer
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE26808 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 405
AAO21432
ID AAO21432 standard; peptide; 9 AA.
XX
AC AAO21432;
XX
DT 06-AUG-2002 (first entry)
XX
DE Isolated peptide for binding to HLA-Cw6 molecule.
XX
KW Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolytic;
KW proliferation; T cell; HLA-CW3/HLA-CW6.
XX
OS Homo sapiens.
XX
PN WO200226778-A2.
XX
PD 04-APR-2002.
XX
PF 24-SEP-2001; 2001WO-US029920.
XX
PR 26-SEP-2000; 2000US-00670456.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Gnjatic S, Old LJ, Nagata Y, Jager E, Chen Y, Knuth A;
XX
DR WPI; 2002-435193/46.
XX
PT Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or
PT HLA-Cw6, useful for stimulating proliferation of cytolytic T cells.
XX
PS Claim 2; Page 14; 21pp; English.
XX
CC The invention relates to an isolated peptide which binds to a human
CC leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The
CC isolated peptide provokes proliferation of T cells specific to a complex
CC of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.
CC The isolated peptide is useful for stimulating proliferation of a
CC cytolytic T cell response, by contacting a T cell containing sample with
CC a cell which presents a complex of HLA-CW3/HLA-CW6 and the isolated
CC peptide of the invention on its surface. This sequence represents the
CC isolated peptide which binds to the HLA-Cw6 molecule of the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAO21432 (1-9)

```
Qy        291 GCCAGGGGGCCGGAGAGCCGCCTGCTT 317
              |||||||||||||||||||||||||||
Db          1 AlaArgGlyProGluSerArgLeuLeu 9
```

RESULT 406
AAO21431
ID AAO21431 standard; peptide; 9 AA.
XX
AC AAO21431;
XX
DT 06-AUG-2002 (first entry)
XX
DE Isolated peptide for binding to HLA-Cw3 molecule.
XX
KW Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolytic;
KW proliferation; T cell; HLA-CW3/HLA-CW6.
XX
OS Homo sapiens.
XX
PN WO200226778-A2.
XX
PD 04-APR-2002.
XX
PF 24-SEP-2001; 2001WO-US029920.
XX
PR 26-SEP-2000; 2000US-00670456.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Gnjatic S, Old LJ, Nagata Y, Jager E, Chen Y, Knuth A;
XX
DR WPI; 2002-435193/46.
XX
PT Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or
PT HLA-Cw6, useful for stimulating proliferation of cytolytic T cells.
XX
PS Claim 1; Page 14; 21pp; English.
XX
CC The invention relates to an isolated peptide which binds to a human
CC leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The
CC isolated peptide provokes proliferation of T cells specific to a complex
CC of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.
CC The isolated peptide is useful for stimulating proliferation of a
CC cytolytic T cell response, by contacting a T cell containing sample with
CC a cell which presents a complex of HLA-CW3/HLA-CW6 and the isolated

```
CC   peptide of the invention on its surface. This sequence represents the
CC   isolated peptide which binds to the HLA-Cw3 molecule of the invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAO21431 (1-9)

Qy        327 CTCGCCATGCCTTTCGCGACACCCATG 353
              |||||||||||||||||||||||||||
Db          1 LeuAlaMetProPheAlaThrProMet 9

RESULT 407
AAO21430
ID   AAO21430 standard; peptide; 9 AA.
XX
AC   AAO21430;
XX
DT   06-AUG-2002  (first entry)
XX
DE   HLA-A2 restricted peptide sequence.
XX
KW   Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolytic;
KW   proliferation; T cell; HLA-CW3/HLA-CW6; HLA-A2.
XX
OS   Homo sapiens.
XX
PN   WO200226778-A2.
XX
PD   04-APR-2002.
XX
PF   24-SEP-2001; 2001WO-US029920.
XX
PR   26-SEP-2000; 2000US-00670456.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Gnjatic S,  Old LJ,  Nagata Y,  Jager E,  Chen Y,  Knuth A;
XX
DR   WPI; 2002-435193/46.
XX
PT   Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or
PT   HLA-Cw6, useful for stimulating proliferation of cytolytic T cells.
XX
PS   Example 3; Page 9; 21pp; English.
XX
CC   The invention relates to an isolated peptide which binds to a human
CC   leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The
CC   isolated peptide provokes proliferation of T cells specific to a complex
CC   of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.
CC   The isolated peptide is useful for stimulating proliferation of a
CC   cytolytic T cell response, by contacting a T cell containing sample with
CC   a cell which presents a complex of HLA-CW3/HLA-CW6 and the isolated
CC   peptide of the invention on its surface. This sequence represents an HLA-
CC   A2 restricted peptide sequence relating to the invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAO21430 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 408
AAE31113
ID   AAE31113 standard; peptide; 9 AA.
XX
AC   AAE31113;
XX
DT   24-FEB-2003  (first entry)
XX
DE   Human ctag peptide #4.
XX
KW   Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS   Homo sapiens.
XX
PN   WO200272627-A2.
XX
PD   19-SEP-2002.
XX
PF   11-MAR-2002; 2002WO-EP002666.
XX
PR   09-MAR-2001; 2001US-0274250P.
PR   14-MAY-2001; 2001US-0290353P.
PR   18-MAY-2001; 2001US-0291610P.
XX
PA   (CALL-) CALLISTOGEN AG.
XX
PI   Wrede P,  Walden P,  Eichler-Mertens M,  Filter M;
XX
DR   WPI; 2002-759836/82.
XX
PT   Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT   lymphocytes and for treating cancer, comprises selecting conserved
PT   regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT   protein.
XX
PS   Disclosure; Page 7; 32pp; English.
XX
CC   The invention relates to a method for providing, identifying or/and
CC   optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC   of the obtained peptides for vaccination. The method is useful for
CC   providing, identifying and/or optimising peptides that are useful in
CC   manufacturing a pharmaceutical composition for the induction of cytotoxic
CC   T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC   or viral infections. The invention is also used in gene therapy. The
CC   present sequence is human ctag peptide used to illustrate the method of
CC   the invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x AAE31113 (1-9)

Qy        447 ATACTGACTATCCGACTGACTGCTGCA 473
              |||||||||||||||||||||||||||
Db          1 IleLeuThrIleArgLeuThrAlaAla 9

RESULT 409
AAE31112
ID   AAE31112 standard; peptide; 9 AA.
XX
```

AC AAE31112;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human ctag peptide #3.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX
PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 7; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The
CC present sequence is human ctag peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31112 (1-9)

```
Qy        444 AACATACTGACTATCCGACTGACTGCT 470
              |||||||||||||||||||||||||||
Db          1 AsnIleLeuThrIleArgLeuThrAla 9
```

RESULT 410
AAE31114
ID AAE31114 standard; peptide; 9 AA.
XX
AC AAE31114;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human ctag peptide #5.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX
PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 7; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The
CC present sequence is human ctag peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31114 (1-9)

```
Qy        453 ACTATCCGACTGACTGCTGCAGACCAC 479
              |||||||||||||||||||||||||||
Db          1 ThrIleArgLeuThrAlaAlaAspHis 9
```

RESULT 411
AAE31115
ID AAE31115 standard; peptide; 9 AA.
XX
AC AAE31115;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human ctag peptide #6.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX

PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 7; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The
CC present sequence is human ctag peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31115 (1-9)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              |||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9
```

RESULT 412
AAE31110
ID AAE31110 standard; peptide; 9 AA.
XX
AC AAE31110;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human ctag peptide #1.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX
PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 7; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The
CC present sequence is human ctag peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31110 (1-9)

```
Qy        360 GAGCTGGCCCGCAGGAGCCTGGCCCAG 386
              |||||||||||||||||||||||||||
Db          1 GluLeuAlaArgArgSerLeuAlaGln 9
```

RESULT 413
AAE31111
ID AAE31111 standard; peptide; 9 AA.
XX
AC AAE31111;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human ctag peptide #2.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX
PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 7; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The

CC present sequence is human ctag peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31111 (1-9)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCC 440
              |||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSer 9
```

RESULT 414
AAE31371
ID AAE31371 standard; peptide; 9 AA.
XX
AC AAE31371;
XX
DT 24-FEB-2003 (first entry)
XX
DE Human CTAG peptide.
XX
KW Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.
XX
OS Homo sapiens.
XX
PN WO200272627-A2.
XX
PD 19-SEP-2002.
XX
PF 11-MAR-2002; 2002WO-EP002666.
XX
PR 09-MAR-2001; 2001US-0274250P.
PR 14-MAY-2001; 2001US-0290353P.
PR 18-MAY-2001; 2001US-0291610P.
XX
PA (CALL-) CALLISTOGEN AG.
XX
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;
XX
DR WPI; 2002-759836/82.
XX
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-
PT lymphocytes and for treating cancer, comprises selecting conserved
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the
PT protein.
XX
PS Disclosure; Page 13; 32pp; English.
XX
CC The invention relates to a method for providing, identifying or/and
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses
CC of the obtained peptides for vaccination. The method is useful for
CC providing, identifying and/or optimising peptides that are useful in
CC manufacturing a pharmaceutical composition for the induction of cytotoxic
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer
CC or viral infections. The invention is also used in gene therapy. The
CC present sequence is human CTAG peptide used to illustrate the method of
CC the invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAE31371 (1-9)

```
Qy        414 GTGCTTCTGAAGGAGTTCACTGTGTCC 440
              |||||||||||||||||||||||||||
Db          1 ValLeuLeuLysGluPheThrValSer 9
```

RESULT 415
ABP74293
ID ABP74293 standard; peptide; 9 AA.
XX
AC ABP74293;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:177.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74293 (1-9)

```
Qy        333 ATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||
Db          1 MetProPheAlaThrProMetGluAla 9

RESULT 416
ABP74313
ID   ABP74313 standard; peptide; 9 AA.
XX
AC   ABP74313;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:197.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74313 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 417
ABP74309
ID   ABP74309 standard; peptide; 9 AA.
XX
AC   ABP74309;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:193.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74309 (1-9)

Qy        495 TCCATCAGCTCCTGTCTCCAGCAGCTT 521
              ||||||||||||||||||||||||||
Db          1 SerIleSerSerCysLeuGlnGlnLeu 9

RESULT 418
ABP74318
ID   ABP74318 standard; peptide; 9 AA.
```

XX
AC ABP74318;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:202.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74318 (1-9)

```
Qy        540 ACGCAGTGCTTTCTGCCCGTGTTTTTG 566
              |||||||||||||||||||||||||||
Db          1 ThrGlnCysPheLeuProValPheLeu 9
```

RESULT 419
ABP74298
ID ABP74298 standard; peptide; 9 AA.
XX
AC ABP74298;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:182.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
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CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
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CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74298 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 420
ABP74306
ID ABP74306 standard; peptide; 9 AA.
XX
AC ABP74306;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:190.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;

```
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
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CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74306 (1-9)

Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9

RESULT 421
ABP74286
ID   ABP74286 standard; peptide; 9 AA.
XX
AC   ABP74286;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:170.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
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XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ABP74286 (1-9)

Qy        300 CCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              |||||||||||||||||||||||||
Db          1 ProGluSerArgLeuLeuGluPheTyr 9

RESULT 422
ABP74294
ID   ABP74294 standard; peptide; 9 AA.
XX
AC   ABP74294;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:178.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
```

PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
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SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74294 (1-9)

```
Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTG 422
              |||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeu 9
```

RESULT 423
ABP74308
ID ABP74308 standard; peptide; 9 AA.
XX
AC ABP74308;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:192.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
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XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
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DR WPI; 2003-067518/06.
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XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74308 (1-9)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              |||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9
```

RESULT 424
ABP74315
ID ABP74315 standard; peptide; 9 AA.
XX
AC ABP74315;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:199.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX

```
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
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DR   WPI; 2003-067518/06.
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CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABP74315 (1-9)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATC 539
              |||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 425
ABP74290
ID   ABP74290 standard; peptide; 9 AA.
XX
AC   ABP74290;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:174.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
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PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
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CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABP74290 (1-9)

Qy        315 CTTGAGTTCTACCTCGCCATGCCTTTC 341
              |||||||||||||||||||||||||||
Db          1 LeuGluPheTyrLeuAlaMetProPhe 9

RESULT 426
ABP74301
ID   ABP74301 standard; peptide; 9 AA.
XX
AC   ABP74301;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:185.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
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Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74301 (1-9)

```
Qy        432 ACTGTGTCCGGCAACATACTGACTATC 458
              |||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIle 9
```

RESULT 427
ABP74303
ID ABP74303 standard; peptide; 9 AA.
XX
AC ABP74303;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:187.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
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PR 06-APR-2001; 2001US-0282211P.
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XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74303 (1-9)

```
Qy        411 GGGGTGCTTCTGAAGGAGTTCACTGTG 437
              |||||||||||||||||||||||||||
Db          1 GlyValLeuLeuLysGluPheThrVal 9
```

RESULT 428
ABP74288
ID ABP74288 standard; peptide; 9 AA.
XX
AC ABP74288;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:172.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
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PR 07-MAR-2002; 2002US-0363210P.
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XX
SQ Sequence 9 AA;

Alignment Scores:

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Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74288 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 429
ABP74285
ID ABP74285 standard; peptide; 9 AA.
XX
AC ABP74285;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:169.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
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CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74285 (1-9)

```
Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTC 323
              |||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPhe 9
```

RESULT 430
ABP74314
ID ABP74314 standard; peptide; 9 AA.
XX
AC ABP74314;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:198.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present

```
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74314 (1-9)

Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTG 527
              |||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeu 9

RESULT 431
ABP74289
ID   ABP74289 standard; peptide; 9 AA.
XX
AC   ABP74289;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:173.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 17; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74289 (1-9)

Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATG 335
              |||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMet 9

RESULT 432
ABP74472
ID   ABP74472 standard; peptide; 9 AA.
XX
AC   ABP74472;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:356.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 22; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
```

```
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ABP74472 (1-9)

Qy        243 CCGCATGGCGGCGCGGCTTCAGGGCTG 269
              |||||||||||||||||||||||||||
Db          1 ProHisGlyGlyAlaAlaSerGlyLeu 9

RESULT 433
ABP74316
ID   ABP74316 standard; peptide; 9 AA.
XX
AC   ABP74316;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:200.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ABP74316 (1-9)

Qy        504 TCCTGTCTCCAGCAGCTTTCCCTGTTG 530
              |||||||||||||||||||||||||||
Db          1 SerCysLeuGlnGlnLeuSerLeuLeu 9

RESULT 434
ABP74312
ID   ABP74312 standard; peptide; 9 AA.
XX
AC   ABP74312;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:196.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ABP74312 (1-9)

Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTG 560
              |||||||||||||||||||||||||||
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```
Db          1 TrpIleThrGlnCysPheLeuProVal 9

RESULT 435
ABP74471
ID   ABP74471 standard; peptide; 9 AA.
XX
AC   ABP74471;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:355.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 22; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74471 (1-9)

Qy        207 AGGGCCTCGGGGCCGGGAGGAGGCGCC 233
              |||||||||||||||||||||||||||
Db          1 ArgAlaSerGlyProGlyGlyGlyAla 9

RESULT 436
ABP74305
ID   ABP74305 standard; peptide; 9 AA.
XX
AC   ABP74305;
XX
DT   03-FEB-2003  (first entry)
XX
DE   Human NY-ESO-1 epitope SEQ ID NO:189.
XX
KW   Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW   T cell.
XX
OS   Homo sapiens.
XX
PN   WO200281646-A2.
XX
PD   17-OCT-2002.
XX
PF   04-APR-2002; 2002WO-US011101.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-067518/06.
XX
PT   Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT   encoding the peptides, that are useful epitopes of target-associated
PT   antigens.
XX
PS   Claim 1; Page 18; 352pp; English.
XX
CC   The present invention describes an isolated epitope (I) and an epitope
CC   cluster. Also described is a vaccine or immunotherapeutic composition
CC   (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC   treating an animal, by administering to an animal the vaccine or
CC   immunotherapeutic composition. VC is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic composition, by
CC   administering VC to an HLA-transgenic animal and evaluating
CC   immunogenicity based on a characteristic of the animal, or by in vitro
CC   primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC   useful for determining specific T cell frequency, by contacting T cells
CC   with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC   limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC   polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC   ABP74713 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABP74305 (1-9)

Qy        417 CTTCTGAAGGAGTTCACTGTGTCCGGC 443
              |||||||||||||||||||||||||||
Db          1 LeuLeuLysGluPheThrValSerGly 9

RESULT 437
ABP74470
ID   ABP74470 standard; peptide; 9 AA.
XX
AC   ABP74470;
XX
```

DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:354.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 22; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74470 (1-9)

```
Qy        252 GGCGCGGCTTCAGGGCTGAATGGATGC 278
              |||||||||||||||||||||||||||
Db          1 GlyAlaAlaSerGlyLeuAsnGlyCys 9
```

RESULT 438
ABU64827
ID ABU64827 standard; peptide; 9 AA.
XX
AC ABU64827;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #11.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

```
US-10-023-182-1 (1-752) x ABU64827 (1-9)

Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              ||||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9

RESULT 439
ABU64824
ID   ABU64824 standard; peptide; 9 AA.
XX
AC   ABU64824;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #8.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816          Length:        9
Score:                    9.00         Matches:       9
Percent Similarity:       100.00%      Conservative:  0
Best Local Similarity:    100.00%      Mismatches:    0
Query Match:              5.00%        Indels:        0
DB:                       1            Gaps:          0

US-10-023-182-1 (1-752) x ABU64824 (1-9)

Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 440
ABU64831
ID   ABU64831 standard; peptide; 9 AA.
XX
AC   ABU64831;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #15.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
```

```
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64831 (1-9)

Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 441
ABU64832
ID   ABU64832 standard; peptide; 9 AA.
XX
AC   ABU64832;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #16.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64832 (1-9)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
              |||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 442
ABU64838
ID   ABU64838 standard; peptide; 9 AA.
XX
AC   ABU64838;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #22.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
```

KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64838 (1-9)

Qy 381 GCCCAGGATGCCCCACCGCTTCCCGTG 407
||||||||||||||||||||||||||||

Db 1 AlaGlnAspAlaProProLeuProVal 9

RESULT 443
ABU64817
ID ABU64817 standard; peptide; 9 AA.
XX
AC ABU64817;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #1.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,

CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64817 (1-9)

```
Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTC 323
              |||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPhe 9
```

RESULT 444
ABU64834
ID ABU64834 standard; peptide; 9 AA.
XX
AC ABU64834;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #18.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64834 (1-9)

```
Qy        300 CCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              |||||||||||||||||||||||||
Db          1 ProGluSerArgLeuLeuGluPheTyr 9
```

RESULT 445
ABU64830
ID ABU64830 standard; peptide; 9 AA.
XX
AC ABU64830;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #14.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64830 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 446
ABU64829
ID ABU64829 standard; peptide; 9 AA.
XX
AC ABU64829;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #13.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64829 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 447
ABU64840
ID ABU64840 standard; peptide; 9 AA.

XX
AC ABU64840;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #24.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64840 (1-9)

```
Qy        537 ATCACGCAGTGCTTTCTGCCCGTGTTT 563
              |||||||||||||||||||||||||||
Db          1 IleThrGlnCysPheLeuProValPhe 9
```

RESULT 448
ABU64835
ID ABU64835 standard; peptide; 9 AA.
XX
AC ABU64835;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #19.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such

CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64835 (1-9)

```
Qy        357 GCAGAGCTGGCCCGCAGGAGCCTGGCC 383
              |||||||||||||||||||||||||||
Db          1 AlaGluLeuAlaArgArgSerLeuAla 9
```

RESULT 449
ABU64813
ID ABU64813 standard; peptide; 9 AA.
XX
AC ABU64813;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 CTL stimulatory peptide #2.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 12; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents a CTL
CC stimulatory peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64813 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 450
ABU64818
ID ABU64818 standard; peptide; 9 AA.
XX
AC ABU64818;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #2.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.

PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64818 (1-9)

```
Qy        525 CTGTTGATGTGGATCACGCAGTGCTTT 551
              |||||||||||||||||||||||||||
Db          1 LeuLeuMetTrpIleThrGlnCysPhe 9
```

RESULT 451
ABU64828
ID ABU64828 standard; peptide; 9 AA.
XX
AC ABU64828;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #12.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0

```
DB:                    1              Gaps:          0

US-10-023-182-1 (1-752) x ABU64828 (1-9)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
                ||||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 452
ABU64822
ID   ABU64822 standard; peptide; 9 AA.
XX
AC   ABU64822;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #6.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ABU64822 (1-9)

Qy        288 GGGGCCAGGGGGCCGGAGAGCCGCCTG 314
                ||||||||||||||||||||||||||||
Db          1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 453
ABU64825
ID   ABU64825 standard; peptide; 9 AA.
XX
AC   ABU64825;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #9.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
```

```
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64825 (1-9)

Qy        390 GCCCCACCGCTTCCCGTGCCAGGGGTG 416
              |||||||||||||||||||||||||||
Db          1 AlaProProLeuProValProGlyVal 9

RESULT 454
ABU64836
ID   ABU64836 standard; peptide; 9 AA.
XX
AC   ABU64836;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #20.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW   autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW   human leukocyte antigen; HLA binding motif.
XX
OS   Homo sapiens.
XX
PN   US2002164665-A1.
XX
PD   07-NOV-2002.
XX
PF   17-DEC-2001; 2001US-00023182.
XX
PR   03-OCT-1996;   96US-00725182.
PR   15-SEP-1997;   97US-00937263.
PR   29-DEC-2000; 2000US-00751798.
XX
PA   (STOC/) STOCKERT E.
PA   (JAGE/) JAGER E.
PA   (CHEN/) CHEN Y.
PA   (SCAN/) SCANLAN M.
PA   (ALEX/) ALEXANDER K.
PA   (OLDL/) OLD L J.
XX
PI   Stockert E,  Jager E,  Chen Y,  Scanlan M,  Alexander K,  Old LJ;
XX
DR   WPI; 2003-298695/29.
XX
PT   New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT   for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT   prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT   autoimmune disorders.
XX
PS   Example 13; Page 6; 18pp; English.
XX
CC   The invention relates to an isolated antibody or binding fragment of an
CC   antibody, which binds with a protein that is encoded by an isolated
CC   nucleic acid molecule the complementary sequence of which hybridises
CC   under stringent conditions to a nucleic acid molecule comprising the
CC   nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC   ABX96656. Also included are a hybridoma cell line producing the novel
CC   monoclonal antibody, screening for cancer in a sample (by contacting the
CC   sample with the isolated antibody, and determining binding of the novel
CC   antibody to a target as an indicator of cancer), determining antibodies
CC   against a cancer-associated antigen in a sample, determining
CC   regression/progression/onset of a cancerous condition (by monitoring a
CC   sample from a patient with the cancerous condition from parameters such
CC   as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC   antibody that binds to it, where the amount of the parameter is
CC   indicative of progression, regression or onset of cancerous conditions),
CC   and treating a subject afflicted with a cancerous condition by
CC   administering to the subject an antibody that specifically binds to NY-
CC   ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC   as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC   (serological identification of antigens by recombinant expression
CC   cloning) expressed on a cancerous cell associated with the cancerous
CC   condition) where the antibody is coupled to an anticancer agent. The
CC   antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC   lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC   infections or autoimmune disorders. The present sequence represents an
CC   HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ABU64836 (1-9)

Qy        351 ATGGAAGCAGAGCTGGCCCGCAGGAGC 377
              |||||||||||||||||||||||||||
Db          1 MetGluAlaGluLeuAlaArgArgSer 9

RESULT 455
ABU64839
ID   ABU64839 standard; peptide; 9 AA.
XX
AC   ABU64839;
XX
DT   14-MAY-2003  (first entry)
XX
DE   Human NY-ESO-1 HLA binding motif #23.
XX
KW   Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW   serological identification of antigens by recombinant expression cloning;
KW   melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW   lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
```

KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64839 (1-9)

Qy 486 CTGCAGCTCTCCATCAGCTCCTGTCTC 512

||||||||||||||||||||||||||
Db 1 LeuGlnLeuSerIleSerSerCysLeu 9

RESULT 456
ABU64814
ID ABU64814 standard; peptide; 9 AA.
XX
AC ABU64814;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 CTL stimulatory peptide #3.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 12; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,

CC infections or autoimmune disorders. The present sequence represents a CTL
CC stimulatory peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64814 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 457
ABU64823
ID ABU64823 standard; peptide; 9 AA.
XX
AC ABU64823;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #7.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64823 (1-9)

```
Qy        231 GCCCCGCGGGGTCCGCATGGCGGCGCG 257
              |||||||||||||||||||||||||||
Db          1 AlaProArgGlyProHisGlyGlyAla 9
```

RESULT 458
ABU64819
ID ABU64819 standard; peptide; 9 AA.
XX
AC ABU64819;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #3.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64819 (1-9)

```
Qy        528 TTGATGTGGATCACGCAGTGCTTTCTG 554
              |||||||||||||||||||||||||||
Db          1 LeuMetTrpIleThrGlnCysPheLeu 9
```

RESULT 459
ABU64826
ID ABU64826 standard; peptide; 9 AA.
XX
AC ABU64826;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #10.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABU64826 (1-9)

```
Qy        339 TTCGCGACACCCATGGAAGCAGAGCTG 365
              |||||||||||||||||||||||||||
Db          1 PheAlaThrProMetGluAlaGluLeu 9
```

RESULT 460
ADA19553
ID ADA19553 standard; peptide; 9 AA.

XX
AC ADA19553;
XX
DT 20-NOV-2003 (first entry)
XX
DE Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #2.
XX
KW Lymphoid tissue-specific cell; haematopoietic progenitor cell;
KW lymphoreticular stromal cell; transplantation; implantation;
KW autoimmune disease; infectious disease; maintenance; expansion;
KW differentiation; T cell tolerance; immune tolerance; T-cell reactivity;
KW therapeutic; differentiated progeny; antigen; MHC;
KW major histocompatibility complex; cancer; human.
XX
OS Homo sapiens.
XX
PN US6548299-B1.
XX
PD 15-APR-2003.
XX
PF 18-MAY-2000; 2000US-00574749.
XX
PR 12-NOV-1999; 99WO-US026795.
XX
PA (PYKE/) PYKETT M J.
PA (ROSE/) ROSENZWEIG M.
PA (SCAD/) SCADDEN D T.
PA (POZN/) POZNANSKY M C.
XX
PI Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;
XX
DR WPI; 2003-605374/57.
XX
PT Producing lymphoid tissue-specific cell in vivo, useful in
PT transplantation, implantation, autoimmune and/or infectious diseases by
PT introducing hematopoietic progenitor and lymphoreticular stromal cells
PT into a porous solid matrix.
XX
PS Disclosure; SEQ ID NO 34; 34pp; English.
XX
CC The invention discloses a method for producing lymphoid tissue-specific
CC cell in vivo, comprising introducing haematopoietic progenitor cells and
CC lymphoreticular stromal cells into a porous, solid matrix having
CC interconnected pores of a pore size sufficient to permit the cells to
CC grow throughout the matrix, and co-culturing the haematopoietic
CC progenitor cells and lymphoreticular stromal cells. The methods are
CC useful in transplantation, implantation, autoimmune diseases and/or
CC infectious diseases. They are particularly useful for in vivo
CC maintenance, expansion and/or differentiation of haematopoietic
CC progenitor cells, for inducing T cell tolerance, for treating a subject
CC to enhance immune tolerance, for inducing T-cell reactivity, and for
CC identifying an agent suspected of affecting haematopoietic cell
CC development. The lymphoid tissue-specific cells are useful in laboratory
CC analysis and in therapeutics. The method provides rapid generation of a
CC large number of differentiated progeny. The sequence presented is a
CC cancer antigen which was used in the invention to expand haematopoietic
CC progenitor cells.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADA19553 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 461
ADA19554
ID ADA19554 standard; peptide; 9 AA.
XX
AC ADA19554;
XX
DT 20-NOV-2003 (first entry)
XX
DE Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #3.
XX
KW Lymphoid tissue-specific cell; haematopoietic progenitor cell;
KW lymphoreticular stromal cell; transplantation; implantation;
KW autoimmune disease; infectious disease; maintenance; expansion;
KW differentiation; T cell tolerance; immune tolerance; T-cell reactivity;
KW therapeutic; differentiated progeny; antigen; MHC;
KW major histocompatibility complex; cancer; human.
XX
OS Homo sapiens.
XX
PN US6548299-B1.
XX
PD 15-APR-2003.
XX
PF 18-MAY-2000; 2000US-00574749.
XX
PR 12-NOV-1999; 99WO-US026795.
XX
PA (PYKE/) PYKETT M J.
PA (ROSE/) ROSENZWEIG M.
PA (SCAD/) SCADDEN D T.
PA (POZN/) POZNANSKY M C.
XX
PI Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;
XX
DR WPI; 2003-605374/57.
XX
PT Producing lymphoid tissue-specific cell in vivo, useful in
PT transplantation, implantation, autoimmune and/or infectious diseases by
PT introducing hematopoietic progenitor and lymphoreticular stromal cells
PT into a porous solid matrix.
XX
PS Disclosure; SEQ ID NO 35; 34pp; English.
XX
CC The invention discloses a method for producing lymphoid tissue-specific
CC cell in vivo, comprising introducing haematopoietic progenitor cells and
CC lymphoreticular stromal cells into a porous, solid matrix having
CC interconnected pores of a pore size sufficient to permit the cells to
CC grow throughout the matrix, and co-culturing the haematopoietic
CC progenitor cells and lymphoreticular stromal cells. The methods are
CC useful in transplantation, implantation, autoimmune diseases and/or
CC infectious diseases. They are particularly useful for in vivo
CC maintenance, expansion and/or differentiation of haematopoietic
CC progenitor cells, for inducing T cell tolerance, for treating a subject
CC to enhance immune tolerance, for inducing T-cell reactivity, and for
CC identifying an agent suspected of affecting haematopoietic cell
CC development. The lymphoid tissue-specific cells are useful in laboratory
CC analysis and in therapeutics. The method provides rapid generation of a
CC large number of differentiated progeny. The sequence presented is a
CC cancer antigen which was used in the invention to expand haematopoietic
CC progenitor cells.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADA19554 (1-9)

```
Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              ||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9
```

RESULT 462
ADC09165
ID ADC09165 standard; peptide; 9 AA.
XX
AC ADC09165;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 190.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 190; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09165 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 463
ADC09147
ID ADC09147 standard; peptide; 9 AA.
XX
AC ADC09147;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 172.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 172; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09147 (1-9)

```
Qy        303 GAGAGCCGCCTGCTTGAGTTCTACCTC 329
              |||||||||||||||||||||||||||
Db          1 GluSerArgLeuLeuGluPheTyrLeu 9
```

RESULT 464
ADC09160
ID ADC09160 standard; peptide; 9 AA.

XX
AC ADC09160;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 185.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 185; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09160 (1-9)

```
Qy        432 ACTGTGTCCGGCAACATACTGACTATC 458
              |||||||||||||||||||||||||||
Db          1 ThrValSerGlyAsnIleLeuThrIle 9
```

RESULT 465
ADC09157
ID ADC09157 standard; peptide; 9 AA.
XX
AC ADC09157;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 182.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 182; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09157 (1-9)

```
Qy        405 GTGCCAGGGGTGCTTCTGAAGGAGTTC 431
              |||||||||||||||||||||||||||
Db          1 ValProGlyValLeuLeuLysGluPhe 9
```

RESULT 466
ADC09162
ID ADC09162 standard; peptide; 9 AA.
XX
AC ADC09162;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 187.
XX
KW Epitope; immunological; vaccine;

KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 187; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09162 (1-9)

```
Qy        411 GGGGTGCTTCTGAAGGAGTTCACTGTG 437
              |||||||||||||||||||||||||||
Db          1 GlyValLeuLeuLysGluPheThrVal 9
```

RESULT 467
ADC09148
ID ADC09148 standard; peptide; 9 AA.
XX
AC ADC09148;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 173.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 173; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09148 (1-9)

```
Qy        309 CGCCTGCTTGAGTTCTACCTCGCCATG 335
              |||||||||||||||||||||||||||
Db          1 ArgLeuLeuGluPheTyrLeuAlaMet 9
```

RESULT 468
ADC09149
ID ADC09149 standard; peptide; 9 AA.
XX
AC ADC09149;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 174.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.

```
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 174; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:         9
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADC09149 (1-9)

Qy        315 CTTGAGTTCTACCTCGCCATGCCTTTC 341
              |||||||||||||||||||||||||||
Db          1 LeuGluPheTyrLeuAlaMetProPhe 9

RESULT 469
ADC09172
ID   ADC09172 standard; peptide; 9 AA.
XX
AC   ADC09172;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 197.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 197; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:         9
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADC09172 (1-9)

Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              |||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 470
ADC09329
ID   ADC09329 standard; peptide; 9 AA.
XX
AC   ADC09329;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 354.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
```

XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 354; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09329 (1-9)

```
Qy        252 GGCGCGGCTTCAGGGCTGAATGGATGC 278
              |||||||||||||||||||||||||||
Db          1 GlyAlaAlaSerGlyLeuAsnGlyCys 9
```

RESULT 471
ADC09167
ID ADC09167 standard; peptide; 9 AA.
XX
AC ADC09167;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 192.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 192; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09167 (1-9)

```
Qy        468 GCTGCAGACCACCGCCAACTGCAGCTC 494
              |||||||||||||||||||||||||||
Db          1 AlaAlaAspHisArgGlnLeuGlnLeu 9
```

RESULT 472
ADC09145
ID ADC09145 standard; peptide; 9 AA.
XX
AC ADC09145;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 170.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.

XX
PS Claim 1; SEQ ID NO 170; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09145 (1-9)

```
Qy        300 CCGGAGAGCCGCCTGCTTGAGTTCTAC 326
              |||||||||||||||||||||||||
Db          1 ProGluSerArgLeuLeuGluPheTyr 9
```

RESULT 473
ADC09152
ID ADC09152 standard; peptide; 9 AA.
XX
AC ADC09152;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 177.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 177; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09152 (1-9)

```
Qy        333 ATGCCTTTCGCGACACCCATGGAAGCA 359
              |||||||||||||||||||||||||
Db          1 MetProPheAlaThrProMetGluAla 9
```

RESULT 474
ADC09171
ID ADC09171 standard; peptide; 9 AA.
XX
AC ADC09171;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 196.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 196; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The

CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09171 (1-9)

```
Qy        534 TGGATCACGCAGTGCTTTCTGCCCGTG 560
              |||||||||||||||||||||||||||
Db          1 TrpIleThrGlnCysPheLeuProVal 9
```

RESULT 475
ADC09175
ID ADC09175 standard; peptide; 9 AA.
XX
AC ADC09175;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 200.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 200; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09175 (1-9)

```
Qy        504 TCCTGTCTCCAGCAGCTTTCCCTGTTG 530
              |||||||||||||||||||||||||||
Db          1 SerCysLeuGlnGlnLeuSerLeuLeu 9
```

RESULT 476
ADC09330
ID ADC09330 standard; peptide; 9 AA.
XX
AC ADC09330;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 355.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 355; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the

```
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ADC09330 (1-9)

Qy        207 AGGGCCTCGGGGCCGGGAGGAGGCGCC 233
              |||||||||||||||||||||||||||
Db          1 ArgAlaSerGlyProGlyGlyGlyAla 9

RESULT 477
ADC09173
ID   ADC09173 standard; peptide; 9 AA.
XX
AC   ADC09173;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 198.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 198; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
Best Local Similarity:  100.00%       Mismatches:    0
Query Match:            5.00%         Indels:        0
DB:                     1             Gaps:          0

US-10-023-182-1 (1-752) x ADC09173 (1-9)

Qy        501 AGCTCCTGTCTCCAGCAGCTTTCCCTG 527
              |||||||||||||||||||||||||||
Db          1 SerSerCysLeuGlnGlnLeuSerLeu 9

RESULT 478
ADC09174
ID   ADC09174 standard; peptide; 9 AA.
XX
AC   ADC09174;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 199.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 199; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:        9
Score:                  9.00          Matches:       9
Percent Similarity:     100.00%       Conservative:  0
```

```
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ADC09174 (1-9)

Qy        513 CAGCAGCTTTCCCTGTTGATGTGGATC 539
              |||||||||||||||||||||||||||
Db          1 GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 479
ADC09153
ID   ADC09153 standard; peptide; 9 AA.
XX
AC   ADC09153;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 178.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 178; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ADC09153 (1-9)

Qy        396 CCGCTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||||||
Db          1 ProLeuProValProGlyValLeuLeu 9

RESULT 480
ADC09164
ID   ADC09164 standard; peptide; 9 AA.
XX
AC   ADC09164;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 189.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 189; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816            Length:        9
Score:                  9.00           Matches:       9
Percent Similarity:     100.00%        Conservative:  0
Best Local Similarity:  100.00%        Mismatches:    0
Query Match:            5.00%          Indels:        0
DB:                     1              Gaps:          0

US-10-023-182-1 (1-752) x ADC09164 (1-9)

Qy        417 CTTCTGAAGGAGTTCACTGTGTCCGGC 443
              ||||||||||||||||||||||||||||
```

```
Db          1 LeuLeuLysGluPheThrValSerGly 9

RESULT 481
ADC09168
ID   ADC09168 standard; peptide; 9 AA.
XX
AC   ADC09168;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 193.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 193; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ADC09168 (1-9)

Qy        495 TCCATCAGCTCCTGTCTCCAGCAGCTT 521
              |||||||||||||||||||||||||||
Db          1 SerIleSerSerCysLeuGlnGlnLeu 9

RESULT 482
ADC09144
ID   ADC09144 standard; peptide; 9 AA.
XX
AC   ADC09144;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 169.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 169; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816          Length:        9
Score:                  9.00         Matches:       9
Percent Similarity:     100.00%      Conservative:  0
Best Local Similarity:  100.00%      Mismatches:    0
Query Match:            5.00%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x ADC09144 (1-9)

Qy        297 GGGCCGGAGAGCCGCCTGCTTGAGTTC 323
              |||||||||||||||||||||||||||
Db          1 GlyProGluSerArgLeuLeuGluPhe 9

RESULT 483
ADC09177
ID   ADC09177 standard; peptide; 9 AA.
XX
AC   ADC09177;
XX
```

```
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 202.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 202; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ADC09177 (1-9)

Qy        540 ACGCAGTGCTTTCTGCCCGTGTTTTTG 566
              |||||||||||||||||||||||||||
Db          1 ThrGlnCysPheLeuProValPheLeu 9

RESULT 484
ADC09331
ID   ADC09331 standard; peptide; 9 AA.
XX
AC   ADC09331;
XX
DT   18-DEC-2003  (first entry)
XX
DE   Epitope with high affinity for MHC class I #SEQ ID 356.
XX
KW   Epitope; immunological; vaccine;
KW   major histocompatibility complex class I; MHC class I; cancer;
KW   immunisation.
XX
OS   Unidentified.
XX
PN   WO2003008537-A2.
XX
PD   30-JAN-2003.
XX
PF   29-MAR-2002; 2002WO-US010189.
XX
PR   06-APR-2001; 2001US-0282211P.
PR   07-NOV-2001; 2001US-0337017P.
PR   07-MAR-2002; 2002US-0363210P.
XX
PA   (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI   Simard JJL,  Diamond DC,  Liu L,  Xie Z;
XX
DR   WPI; 2003-248010/24.
XX
PT   Epitope having high affinity for major histocompatibility complex class I
PT   useful for treating an animal, evaluating immunogenicity of a vaccine or
PT   therapeutic composition and for diagnosing a disease.
XX
PS   Claim 1; SEQ ID NO 356; 239pp; English.
XX
CC   The invention relates to an isolated epitope polypeptide that has high
CC   affinity for major histocompatibility complex (MHC) class I, and an
CC   epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC   or immunotherapeutic composition containing an epitope of the invention.
CC   Compositions of the invention may be used in the treatment of cancer. The
CC   method can be combined with a radiation therapy, chemotherapy,
CC   biochemotherapy or surgery. The composition is also useful for evaluating
CC   immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC   -peptide complexes of the invention are useful for determining specific T
CC   cell frequency. This method is useful for evaluating immunological
CC   response, by performing the method prior to and subsequent to an
CC   immunisation step. Compositions of the invention are useful for
CC   diagnosing a disease. The current sequence represents an epitope of the
CC   invention with high affinity for MHC class I.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:                816             Length:         9
Score:                    9.00            Matches:        9
Percent Similarity:       100.00%         Conservative:   0
Best Local Similarity:    100.00%         Mismatches:     0
Query Match:              5.00%           Indels:         0
DB:                       1               Gaps:           0

US-10-023-182-1 (1-752) x ADC09331 (1-9)

Qy        243 CCGCATGGCGGCGCGGCTTCAGGGCTG 269
              |||||||||||||||||||||||||||
Db          1 ProHisGlyGlyAlaAlaSerGlyLeu 9

RESULT 485
ADD35553
ID   ADD35553 standard; peptide; 9 AA.
XX
AC   ADD35553;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:3.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
```

OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 1; SEQ ID NO 3; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35553 (1-9)

```
Qy        375 AGCCTGGCCCAGGATGCCCCACCGCTT 401
              |||||||||||||||||||||||||||
Db          1 SerLeuAlaGlnAspAlaProProLeu 9
```

RESULT 486

ADD35561
ID ADD35561 standard; peptide; 9 AA.
XX
AC ADD35561;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:11.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Example 1; SEQ ID NO 11; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9

```
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD35561 (1-9)

Qy        516 CAGCTTTCCCTGTTGATGTGGATCACG 542
              |||||||||||||||||||||||||||
Db          1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 487
ADD35554
ID   ADD35554 standard; peptide; 9 AA.
XX
AC   ADD35554;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:4.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
OS   Homo sapiens.
XX
PN   WO2003068800-A2.
XX
PD   21-AUG-2003.
XX
PF   12-FEB-2003; 2003WO-US004182.
XX
PR   13-FEB-2002; 2002US-0355828P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Jager E,  Knuth A,  Old L,  Gnjatic S;
XX
DR   WPI; 2003-902684/82.
XX
PT   New isolated peptide that binds to an HLA molecule, useful for treating a
PT   subject with a disorder characterized by the presence of complexes of an
PT   HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT   response.
XX
PS   Claim 1; SEQ ID NO 4; 73pp; English.
XX
CC   The present invention describes an isolated peptide (I) consisting of 8-
CC   11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC   B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC   complexes of the peptide and the HLA molecule, where at least 8
CC   contiguous amino acids of the peptide consist of at least 8 contiguous
CC   amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC   described: (1) a composition comprising (I) and a carrier; (2) an
CC   isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC   expression vector comprising the nucleic acid of (2) in operable linkage
CC   with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC   or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC   specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC   of (5); (7) a polytope comprising at least two of (I) that are linked
CC   together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC   isolated tetramer comprising the HLA molecule, biotin and a binding
CC   partner; (10) a composition comprising the tetramer and a carrier; (11)
CC   inducing an immune response in a subject; (12) treating a subject with a
CC   disorder characterised by the presence of complexes of an HLA molecule
CC   and the peptide; (13) a combinatorial library of derivatives of (I),
CC   where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC   for an analogue of (I); (15) an isolated antibody or its fragment that
CC   specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC   soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC   and (17) inducing an immune response on a subject having a disorder
CC   characterised by the presence of the HLA molecule and the peptide. (I)
CC   has cytostatic activity, and can be used in gene therapy. The peptides,
CC   nucleic acid molecules, vectors, compositions, antibodies and methods are
CC   useful for treating a subject with a disorder characterised by the
CC   presence of complexes of an HLA molecule and the peptide, and for
CC   inducing an immune response. The present sequence represents a human NY-
CC   ESO-1 peptide, which is used in the exemplification of the present
CC   invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ   Sequence 9 AA;

Alignment Scores:
Pred. No.:              816           Length:         9
Score:                  9.00          Matches:        9
Percent Similarity:     100.00%       Conservative:   0
Best Local Similarity:  100.00%       Mismatches:     0
Query Match:            5.00%         Indels:         0
DB:                     1             Gaps:           0

US-10-023-182-1 (1-752) x ADD35554 (1-9)

Qy        324 TACCTCGCCATGCCTTTCGCGACACCC 350
              |||||||||||||||||||||||||||
Db          1 TyrLeuAlaMetProPheAlaThrPro 9

RESULT 488
ADD35552
ID   ADD35552 standard; peptide; 9 AA.
XX
AC   ADD35552;
XX
DT   15-JAN-2004  (first entry)
XX
DE   Human NY-ESO-1 peptide SEQ ID NO:2.
XX
KW   human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW   immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW   immunogenic tumour antigen.
XX
OS   Homo sapiens.
XX
PN   WO2003068800-A2.
XX
PD   21-AUG-2003.
XX
PF   12-FEB-2003; 2003WO-US004182.
XX
PR   13-FEB-2002; 2002US-0355828P.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Jager E,  Knuth A,  Old L,  Gnjatic S;
XX
DR   WPI; 2003-902684/82.
XX
PT   New isolated peptide that binds to an HLA molecule, useful for treating a
PT   subject with a disorder characterized by the presence of complexes of an
PT   HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT   response.
XX
PS   Claim 1; SEQ ID NO 2; 73pp; English.
XX
CC   The present invention describes an isolated peptide (I) consisting of 8-
CC   11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC   B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC   complexes of the peptide and the HLA molecule, where at least 8
CC   contiguous amino acids of the peptide consist of at least 8 contiguous
CC   amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC   described: (1) a composition comprising (I) and a carrier; (2) an
CC   isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC   expression vector comprising the nucleic acid of (2) in operable linkage
CC   with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC   or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
```

CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35552 (1-9)

```
Qy        330 GCCATGCCTTTCGCGACACCCATGGAA 356
              |||||||||||||||||||||||||||
Db          1 AlaMetProPheAlaThrProMetGlu 9
```

RESULT 489
ADD35558
ID ADD35558 standard; peptide; 9 AA.
XX
AC ADD35558;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:8.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 14; SEQ ID NO 8; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35558 (1-9)

```
Qy        327 CTCGCCATGCCTTTCGCGACACCCATG 353
              |||||||||||||||||||||||||||
Db          1 LeuAlaMetProPheAlaThrProMet 9
```

RESULT 490
ADD35560
ID ADD35560 standard; peptide; 9 AA.
XX
AC ADD35560;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:10.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX

PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Example 8; SEQ ID NO 10; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35560 (1-9)

```
Qy        522 TCCCTGTTGATGTGGATCACGCAGTGC 548
              ||||||||||||||||||||||||||
Db          1 SerLeuLeuMetTrpIleThrGlnCys 9
```

RESULT 491
ADD35551
ID ADD35551 standard; peptide; 9 AA.
XX
AC ADD35551;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:1.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
PN WO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PF 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjatic S;
XX
DR WPI; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 1; SEQ ID NO 1; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polytope; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polytope comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polytope; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterised by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA/peptide complex, or (I); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
CC characterised by the presence of the HLA molecule and the peptide. (I)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;

Alignment Scores:

Pred. No.:	816	Length:	9
Score:	9.00	Matches:	9
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	5.00%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADD35551 (1-9)

```
Qy        333 ATGCCTTTCGCGACACCCATGGAAGCA 359
              ||||||||||||||||||||||||||||
Db          1 MetProPheAlaThrProMetGluAla 9

RESULT 492
AAU85104
ID   AAU85104 standard; peptide; 30 AA.
XX
AC   AAU85104;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1a segment 3.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36924.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              235          Length:        30
Score:                  9.00         Matches:       9
Percent Similarity:     37.50%       Conservative:  0
Best Local Similarity:  37.50%       Mismatches:    15
Query Match:            5.06%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAU85104 (1-30)

Qy        220 GGCCCCGAGGCCCTTGCTGCCCCTGCGCCCCGGGGACCTCTGCCGCCCGTGGCACCCGCC 161
              ||||||          |||         |||||||||.          |||
Db          5 GlyProGlyGluAlaGlyAlaThrGlyGlyArgGlyProArgGlyAlaGlyAlaAlaArg 24

Qy        160 TCTCCTGGGCCG 149
              ||||||
Db         25 AlaSerGlyPro 28

RESULT 493
AAU85116
ID   AAU85116 standard; peptide; 30 AA.
XX
AC   AAU85116;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1b segment 3.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36936.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
```

```
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              235          Length:        30
Score:                  9.00         Matches:       9
Percent Similarity:     33.33%       Conservative:  0
Best Local Similarity:  33.33%       Mismatches:    18
Query Match:            5.06%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAU85116 (1-30)

Qy        298 CCCCTGGCCCCGCATCTGCAGCATCCATTCAGCCCTGAAGCCGCGCCGCCATGCGGACCC 239
              |||   |||          |||   |||          |||   ||||||
Db          4 ProGlyAlaGlnGlyGlnGlnGlyProArgGlyArgGluGluAlaProArgGlyValArg 23

Qy        238 CGCGGGGCGCCTCCTCCCGGC 218
                  |||        |||
Db         24 MetAlaAlaArgLeuGlnGly 30

RESULT 494
AAU85115
ID   AAU85115 standard; peptide; 30 AA.
XX
AC   AAU85115;
XX
DT   08-MAY-2002  (first entry)
XX
DE   Human NYNSO1b segment 2.
XX
KW   Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW   viral infection; human immunodeficieny virus; melanoma;
KW   bacterial infection; Salmonella; Legionella; parasitic infection;
KW   Trypanosoma; Toxoplasma; Giardia.
XX
OS   Homo sapiens.
XX
PN   WO200190197-A1.
XX
PD   29-NOV-2001.
XX
PF   25-MAY-2001; 2001WO-AU000622.
XX
PR   26-MAY-2000; 2000AU-00007761.
XX
PA   (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI   Thomson SA,  Ramshaw IA;
XX
DR   WPI; 2002-147575/19.
DR   N-PSDB; ABK36935.
XX
PT   New synthetic polypeptides having several different segments of at least
PT   one parent polypeptide linked together differently compared to the
PT   linkage in the parent polypeptide, for inducing immune response against a
PT   pathogen or cancer.
XX
PS   Example 3; Fig 27; 364pp; English.
XX
CC   The invention relates to a new synthetic polypeptide (I) comprising
CC   several different segments of at least one parent polypeptide linked
CC   together in a different relationship relative to their linkage in the
CC   parent polypeptide to impede, abrogate or otherwise alter at least one
CC   function associated with the parent polypeptide and for inducing an
CC   immune response against a pathogen or cancer. Also included are a
CC   synthetic polynucleotide encoding and a computer system for designing the
CC   synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC   are referred to as a Savine. The synthetic polypeptide is useful for
CC   modulating immune responses preferably directed against a pathogen or a
CC   cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC   and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC   oesophagus, brain, testicle, uterus), as potentiating agents.
CC   Compositions comprising the polypeptide may be used in the treatment or
CC   prophylaxis against viral (such as infections caused by HIV (human
CC   immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC   virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC   (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC   Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC   (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC   Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC   a peptide derived from a parent protein used to construct a savine of the
CC   invention
XX
SQ   Sequence 30 AA;

Alignment Scores:
Pred. No.:              235          Length:        30
Score:                  9.00         Matches:       9
Percent Similarity:     42.86%       Conservative:  0
Best Local Similarity:  42.86%       Mismatches:    12
Query Match:            5.06%        Indels:        0
DB:                     1            Gaps:          0

US-10-023-182-1 (1-752) x AAU85115 (1-30)

Qy        519 GCTGCTGGAGACAGGAGCTGATGGAGAGCTGCAGTTGGCGGTGGTCTGCAGCAGTCAGTC 460
              ||||||      |||        |||||||||        |||   |||
Db          6 AlaAlaGlnGluArgArgValProArgAlaAlaGluValProGlyAlaGlnGlyGlnGln 25

Qy        459 GGA 457
              |||
Db         26 Gly 26

RESULT 495
AAY06067
ID   AAY06067 standard; peptide; 8 AA.
XX
AC   AAY06067;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
KW   NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW   leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW   metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW   uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW   cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW   liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW   vaccine; cytotoxic T lymphocyte; CTL.
XX
OS   Homo sapiens.
XX
PN   WO9918206-A2.
XX
PD   15-APR-1999.
XX
PF   21-SEP-1998;   98WO-US019609.
XX
PR   08-OCT-1997;   97US-0061428P.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Wang RF,  Rosenberg SA;
XX
DR   WPI; 1999-277270/23.
XX
PT   Cancer antigen NY ESO1/CAG-3.
XX
PS   Example 11; Page 50; 88pp; English.
XX
CC   This peptide corresponds to amino acid residues 55-62 of human NY ESO-
```

CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is
CC capable of eliciting an antigen specific immune response by T cells.
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC and their variants, are useful as cancer vaccines. A claimed method of
CC preventing or inhibiting cancer involves administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 8 AA;

Alignment Scores:

Pred. No.:	918	Length:	8
Score:	8.00	Matches:	8
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	4.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x AAY06067 (1-8)

```
Qy        216 GGGCCGGGAGGAGGCGCCCCGCGG 239
              ||||||||||||||||||||||||
Db          1 GlyProGlyGlyGlyAlaProArg 8
```

RESULT 496
ABP74296
ID ABP74296 standard; peptide; 8 AA.
XX
AC ABP74296;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:180.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 8 AA;

Alignment Scores:

Pred. No.:	918	Length:	8
Score:	8.00	Matches:	8
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	4.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74296 (1-8)

```
Qy        399 CTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeu 8
```

RESULT 497
ABP74300
ID ABP74300 standard; peptide; 8 AA.
XX
AC ABP74300;
XX
DT 03-FEB-2003 (first entry)
XX
DE Human NY-ESO-1 epitope SEQ ID NO:184.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell.
XX
OS Homo sapiens.
XX
PN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-067518/06.
XX
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
PS Claim 1; Page 18; 352pp; English.
XX
CC The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to

CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 8 AA;

Alignment Scores:

Pred. No.:	918	Length:	8
Score:	8.00	Matches:	8
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	4.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ABP74300 (1-8)

```
Qy        399 CTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeu 8
```

RESULT 498
ADC09155
ID ADC09155 standard; peptide; 8 AA.
XX
AC ADC09155;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 180.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 180; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 8 AA;

Alignment Scores:

Pred. No.:	918	Length:	8
Score:	8.00	Matches:	8
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	4.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09155 (1-8)

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Qy        399 CTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeu 8
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RESULT 499
ADC09159
ID ADC09159 standard; peptide; 8 AA.
XX
AC ADC09159;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 184.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
XX
PN WO2003008537-A2.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JJL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 184; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 8 AA;

Alignment Scores:

Pred. No.:	918	Length:	8
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Percent Similarity:	100.00%	Conservative:	0
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Query Match:	4.44%	Indels:	0
DB:	1	Gaps:	0

US-10-023-182-1 (1-752) x ADC09159 (1-8)

```
Qy        399 CTTCCCGTGCCAGGGGTGCTTCTG 422
              ||||||||||||||||||||||||
Db          1 LeuProValProGlyValLeuLeu 8
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Search completed: July 21, 2004, 11:00:10
Job time : 9.5 secs